Lectures
ON THE
PHYSIOLOGY AND PATHOLOGY OF BLOOD DESTRUCTION.

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LECTURE II.

II. SEATS OF HÆMOLYSIS.

GENTLEMEN,—In my first lecture I showed that the destructive change which takes place in the blood is not of the slow nature hitherto described, but is of an altogether more acute character; and, moreover, that this acute hæmolysis is an event of daily occurrence. We have now to consider where this destruction takes place. Does it occur throughout the blood generally or is it localised to certain organs of the body?

One organ at once suggests itself as the probable seat of such a process, and is indeed generally so regarded—namely, the liver. Are not the bile pigments formed by the liver, and are they not in turn derived from hæmoglobin? Is not the liver the chief seat of deposit of blood pigment in large quantities in certain diseases—e.g., pernicious anæmia—in which everything points to a great destruction of blood? Is it not also, as the experiments show, the seat of deposit of pigment when an increased destruction of blood has been experimentally brought about? Where more likely than within the liver has this destruction taken place?

Next to the liver the spleen suggests itself—if, indeed, it does not do so before. Is not blood pigment in greater or less amount a very frequent constituent of the splenic tissue, and is not the peculiar structure of this organ, along with the peculiarities of its circulation,[1] specially favourable to the destruction of effete corpuscles and their subsequent conversion into pigment?

On these points observers are by no means agreed. The exact *rôle* of the liver and spleen in hæmolysis has long been a *quæstio vexata*. The requisite data for deciding the matter one way or another have hitherto been wanting. With regard, for instance, to the significance of blood pigment in this relation the greatest differences of opinion exist. How far does the presence of pigment in the liver and spleen, whether in health, in disease, or as the result of experiment, indicate these organs as the seat of the previous destruction of blood. In the case of the liver may it not simply be due to a destruction of hæmoglobin conveyed to it from elsewhere? In the case of the spleen may not the pigment be the result of capillary extravasations of blood arising from the delicacy of the splenic tissue, as von Wittich suggests; or the result of the "scavenging" (as distinguished from any hæmolytic) function of that organ, in virtue of which all kinds of effete pigment particles are to be found in it? To these questions some very definite answers are supplied by the present investigation.

DISTRIBUTION OF BLOOD PIGMENT AMONGST THE ORGANS.

First of all I will direct your attention to certain peculiarities in the distribution of blood pigment amongst the three organs we have seen to be chiefly concerned in its disposal—viz., the liver, spleen and marrow. This distribution is by no means uniform. The liver, for example, is sometimes loaded with pigment while none is to be found in the spleen, while conversely the spleen may contain much pigment to the entire exclusion of the liver. The following are the chief variations in this respect I have found in the course of my observations.

1. After transfusion of blood (Experiments 1–16) the spleen usually contains a very large amount of blood pigment, while the liver may contain not only relatively but absolutely little. The contrast between the two organs is indeed very striking. The healthier the animal after the transfusion the more striking is it. Moreover, in rabbits what little pigment is present in the liver is always in the form of minute granules within the liver cells, whereas much of the pigment within the spleen is in large conglomerate heaps. Little or no pigment is to be found within the capillaries.

2. As regards the bone marrow the conditions favouring the presence of pigment in it are usually the same as in the case of the spleen, the character of the pigment in both cases being also the same (Experiments 5, 25 and 27). In both cases the amount is greatest when the destruction has been slow and gradual, and little or none may be found when the destruction is rapid (Experiments 42, 44, 46, 47, 48, 55, 61, 65, 74, 76, 77, 83 and 84). It is only in a comparatively few cases that a distinct excess of pigment is to be found in the bone marrow when destruction is very rapid (Experiments 43, 58, 63 and 75). A very close relation thus exists, according to my observations, between spleen and red marrow as regards the relative amounts of pigment to be found in each. The relation is, however, not absolutely constant. I have never found an increase in pigment in the marrow without a corresponding, and even larger, increase in the spleen. On the other hand, I have not unfrequently found a large excess of pigment in the spleen when there was none in the marrow (Experiments 9 and 16 after transfusion; 61, 85, 86 and 87 after injection of hæmolytic agents). The closeness of the relationship in function between spleen and marrow is manifested in other and more striking ways. After removal of the spleen I have always found exceedingly well-marked structural changes in the red marrow, developed too with great rapidity (Experiments 64, 68 and 81).

3. The liver sometimes contains a large amount of pigment when not a trace is to be found in the spleen. This is strikingly seen in the sections now shown from cases of pernicious anæmia. The great disproportion between the amounts of pigment in these two organs in this disease I have fully brought out elsewhere.[2] I have there shown from the recorded analyses that while in health and in other diseases the average percentage of iron in spleen and liver is 0·171 and 0·083 respectively—the percentage being almost twice as great in the spleen as in the liver,—in pernicious anæmia there is a sevenfold increase in this percentage in the liver, with little or no increase in the spleen. Some of the analyses are—0 091 for the spleen and 0 614 for the liver (Stahel), and 0·227 for the spleen and 0 518 for the liver (Rosenstein). In one of my own cases I found on analysis 0 310 per cent. of iron in the liver, while the spleen, examined micro-chemically, showed hardly a trace of iron. In an old person who died of bronchitis I found a percentage of 0 0924 of iron in the liver. A similar distribution of blood pigment between liver and spleen can, I find, occasionally be induced experimentally (Experiments 42 and 43) by the action of hæmolytic agents. In the sections now shown you will note the large amount of fine pigment within the liver, confined to the liver cells, while the spleen shows comparatively little.

BLOOD PIGMENT AS AN INDEX OF THE SEAT OF HÆMOLYSIS.

Liver.

How far, then, are we to regard the presence of blood pigment in the spleen and liver as an indication of their relative activity in hæmolysis? Does the large excess of pigment in the spleen after transfusion, while little or none is to be found in the liver, point to the spleen as the organ chiefly concerned in destroying the foreign red corpuscles? Does the even larger excess in the liver in pernicious anæmia, while little or none is to be found in the spleen, indicate that the liver, as distinguished from the spleen, has been the chief seat of the preceding hæmolysis?

As the result of my earlier investigations, the answer I gave to both these questions was in the affirmative. For not otherwise could I account for the remarkable variations in the distribution of the pigment in the two cases. In a thesis on the subject presented to the University of Edinburgh in 1886 I drew as the result of my investigations a sharp distinction between the action of the liver and spleen as hæmolytic organs. In the liver the destruction, I concluded, was effected in some special way by the liver cells, the chief result of the destruction being the formation of bile pigments

[1] The arteries open directly into open mesh network of channels devoid of definite walls, from which the veins take direct origin. The interstices of this meshwork are filled with a delicate lymphoid tissue in which the various cellular elements lie embedded (von Wittich, Die Milz: Hermann's Handbuch der Physiologie, Bd. vii., 345).

[2] THE LANCET, Sept. 22nd and 29th, 1888.

and probably also of urea (Noel Paton). Within the spleen, on the other hand (or to a less extent within the bone marrow), the hæmolysis was of a different character, resembling more that which occurs around extravasations, the chief result of it being the reduction of hæmoglobin to the form of albuminates of iron. I concluded that an even balance was maintained in health between the activity of the liver and spleen, any disturbance of this relation on the part of the liver being followed by much more serious consequences than when the spleen was at fault, for the reason that the destructive process within the liver was of a much more active nature than that in the spleen. I showed grounds on this view for regarding pernicious anæmia as essentially a disease of the liver resulting from the morbid activity of that organ in hæmolysis. "The nature of the morbid action on its part, which brings about such a destruction of red corpuscles, it is of course not easy to determine. But since in other glands there are from time to time evidences of perverted activity, as shown by altered or excessive secretion, so also in the liver in pernicious anæmia it is probable that some change either in quantity or quality of its secretion is accountable for the enormous destruction of corpuscles. Confirmation of this view as to the pathology of pernicious anæmia can only be obtained after examination of the various organs in a great number of cases" (p. 215).

Such was the view I held regarding the significance of blood pigment, and in particular regarding the importance of the liver as a hæmolytic organ, at the outset of the present investigation. It is well to have it thus fully before us, if only for the reason that the present investigation of which it formed the working hypothesis has afforded no support to it, especially as regards the liver. For the results of that investigation show that the amount of blood pigment in the spleen or liver is no criterion whatever of their relative activity in hæmolysis. This is especially the case where that pigment lies within the liver cells. Pigment in this situation I find to be merely an evidence that hæmoglobin has been broken up within the liver cells without affording any clue as to where it has been set free, whether in the circulation generally in another organ, e.g., the spleen, or in the capillaries of the liver itself.

Thus the difference between spleen and liver already noted in Experiments 42 and 43 was by no means so marked in the fresh, as it now appears in the hardened tissue. In both cases the fresh spleen when tested with sulphide of ammonium revealed a very large amount of pigment, much of it in diffuse form. It is clear, then, that a good deal of this has been lost in the process of hardening, so that I cannot too much impress on you that the activity of an organ in hæmolysis cannot be correctly gauged by the amount of blood pigment found in it after hardening. Nor can it be gauged, I find, by the amount found in the fresh condition. For in two cases of pernicious anæmia, in which the liver contained a very large amount of pigment, while the spleen gave very little iron reaction, the latter was obviously the chief seat of active change in the blood. It was much swollen, purplish in colour (contrasting with the absolute pallor of all the other organs) and contained much free hæmoglobin. It is clear, then, that blood pigment as a guide to the seat of hæmolysis has but a limited significance. The information derivable from a study of the distribution of blood pigment is not always, however, of the negative character just indicated in the case of the liver. In the case of the spleen and bone marrow it is of a more positive kind, as I will now proceed to show.

Spleen.

First of all let me say that my observations supply no support whatever to the view that the presence of pigment within the splenic pulp in the conditions in which it is found so abundantly is referable in any way to the occurrence of capillary extravasations of blood. If such were the case, it ought to be specially abundant in the chronically congested spleen of cardiac or hepatic disease. I have found, on the contrary, that such spleens are frequently singularly free from blood pigment.

Moreover, they lend no support to the view that blood pigment, when present, merely collects in the spleen in virtue of the scavenging function of the cells of that organ.

You will see from the sections now shown (Experiments 33 and 34) that after injection of carmine or ultramarine blue into the blood the pigment particles are to be found in large masses within the capillaries of the liver, chiefly in the portal capillaries, while not a twentieth or even a fiftieth part of the quantity is to be found in the spleen. So far as mere scavenging function towards inert particles is concerned the liver, according to my observations, is a far more important organ than the spleen; and this applies, I find, not only to such extraneous particles introduced into the blood, but also to stromata and other remains of red corpuscles formed by the action of distilled water within the blood (Experiments 88 and 188 [*a*]). After its injection in large quantity, the number of colourless granules and spherules (stromata) to be found in the spleen was both absolutely and relatively small, while in the capillaries of the liver they were in extraordinary abundance. As regards inert particles circulating in the blood, the conditions therefore favour more their arrest in the capillaries of the liver than in the spleen.

I have shown you that as regards blood pigment the reverse is often the case. After transfusion, for example, large quantities may be found within the spleen, while little or none is present within the liver, and what little is present may be solely confined to the liver cells, and absent from the capillaries.

According to Quincke the manner of death of red corpuscles after transfusion is that they gradually lose their elasticity, become effete, are taken up by leucocytes, and ultimately deposited within the capillaries of the liver and in the spleen. If such a description were a correct one, the *rôle* of the spleen would be a comparatively passive one, the spleen would merely be the depository of the pigment conveyed to it.

I conclude from the presence of much pigment in the spleen when none is to be found in the capillaries of the liver that the description given by Quincke does not represent what actually takes place; and that the *rôle* of the spleen in removing red corpuscles from the circulation is not the relatively subordinate one thus ascribed to it. This conclusion has, moreover, an experimental basis; for some experiments I made in this relation show that the cells of the spleen have the power of arresting red corpuscles before these latter have undergone sufficient change to allow their enclosure by ordinary leucocytes (Experiments 92, 93 and 94). The experiments were of this kind, that blood from the ear was examined and compared with that obtained by direct puncture of the exposed spleen. An incision was made directly over the spleen for this purpose. Control observations showed that mere exposure of the organ in this way for several hours did not appreciably affect either its size or the character of the blood obtainable by puncture from it. On the other hand, if pyrogallic acid were injected into the blood, then either immediately (Experiment 94) or within three minutes (Experiment 93), according to largeness of dose, a great enlargement of the spleen occurred, amounting, it might be, to a fourfold or fivefold increase. The spleen, at the same time, became excessively turgid, and its former red colour was replaced by a dark venous one, the position of the Malpighian bodies being, however, still marked out as red points. As early as fifteen minutes after such an injection well-marked changes were observable in blood withdrawn from the spleen, especially in the red corpuscles, while the blood of the ear at the same time showed nothing abnormal; and fifteen minutes later these altered red corpuscles were found enclosed within large splenic cells of pulp. After death in four or five hours, numerous changes in the blood, including many large cells filled with but slightly altered red corpuscles, were found in the spleen, while absent from the liver or from the blood elsewhere.

It seems to me clear, then, that the *rôle* of the splenic cells towards the injured red corpuscles is no mere scavenging one, since in that case similar cells enclosing red corpuscles would have been found in the liver. It is much more active. This becomes most manifest when through any cause—e.g., transfusion, or action of certain poisons—the red corpuscles have received any injury short of their complete disintegration. The injured corpuscles are seized on in great numbers by the cells of the spleen long before a single one can be found within the leucocytes. After death the chief and sometimes the exclusive seat of such cells is the spleen, few or none being found within the liver (Experiments 54, 58 and 75). The activity of the spleen in withdrawing red corpuscles from the circulation is thus, I conclude, decidedly greater than the whole body of leucocytes, including those within the liver. Were the spleen not present, red corpuscles in process of becoming effete would remain longer in the circulation than they actually do. It is in virtue of this function that the spleen may become the seat of much pigment, when—e.g., after transfusion—the liver may be free. To a certain, albeit

a limited, extent therefore the presence of blood pigment within the spleen is an indication of a special hæmolytic activity of that organ.

Bone Marrow.

A similar line of reasoning, without however the same experimental basis, leads to the conclusion that the pigment found within the bone marrow is an indication of an action of its cells in withdrawing red corpuscles from the blood analogous to, though much less marked than that of the splenic cells. I conclude that it acts to a certain extent as supplementary to the spleen. It is, according to my experiments, structurally, and presumably therefore also functionally, more affected by removal of the spleen than any other tissue of the body (Experiments 62, 64 and 89). The change in some cases amounts to a complete transformation, the marrow tissue being replaced by a mass of larger lymphoid cells closely packed together. Moreover, after removal of the spleen the changes found in the marrow after injection of hæmolytic agents are more marked than those met with when the spleen is present.

The information to be obtained from a study of blood pigment regarding the probable seats of hæmolysis, although not unimportant, is thus comparatively limited. So far as it goes it is chiefly negative, pointing to some organ other than the liver as the chief seat of hæmolytic change—in the case of the red corpuscles, most probably the spleen. Much more definite in character was the information I got from a study of the morphological changes in the blood during active hæmolysis, particularly from a study of their distribution.

MORPHOLOGICAL CHANGES IN THE BLOOD DURING ACTIVE HÆMOLYSIS.

The changes I refer to involve the plasma, the red corpuscles and the leucocytes. The chief of these are as follows:—

1. The presence of *colourless albuminous granules and spherules* of varying size, products of disintegration of plasma and red corpuscles, the smallest of them closely resembling the bodies variously termed by observers "hæmatoblasts" of Hayem, "blood plates" of Bizzozero, "granule bodies" (*Körnchenbildungen*) of Max Schultze, "elementary bodies" (*Elementarkörperchen*) of Zimmermann. They are derived, according to my observations, partly from the red corpuscles, the protoplasmic stroma of which can be seen oozing out in droplets and floating away free in the form of small spherules, partly and very largely from the plasma itself. A large number of them I therefore regard as albuminous precipitates (granules) thrown down from the plasma. The leucocytes, so far as my observations go, are an altogether secondary and unimportant source of such granules. The relation between these products of disintegration and the hæmatoblasts and blood plates regarded by Hayem and Bizzozero respectively as normal elements of the blood and by the former as the precursors of the red corpuscles has been to me a subject of much interest throughout my investigations; and it is one I would willingly discuss here did time permit. I will content myself with merely stating that the only difference I have been able to note between the granules I have described and blood plates is that the latter have seemed always to me to be more highly refractile than the former. As to the relation of these blood plates to blood formation, a subject on which Hayem expresses himself with so much assurance, I venture to think that the question is still an entirely open one. I have totally failed to satisfy myself of the existence of any such relationship.

2. Small *coloured spherules* derived from the red corpuscles, partly by a process of oozing in the way just described, but more frequently and characteristically by what I have for convenience termed throughout by observations, a process of budding. The red corpuscle is seen to become constricted at some part, forming a small bud identical in depth of colour and appearance with the chief mass of the corpuscle, and the two portions may frequently be seen for a time united by a delicate, colourless process. This change in the red corpuscle I learnt to recognise as one very characteristic of blood undergoing destructive change. I never found it in healthy blood. In no way can it be better studied than by gradually warming blood to a temperature of 45° or 50° C., as Max Schultze first showed. Under certain circumstances the whole red corpuscles may thus break up, forming a number of highly coloured spheres.

3. *Stromata*, decolourised red corpuscles, the framework of the red corpuscles freed from hæmoglobin, best studied after injection of distilled water into the blood; albuminous spheres, usually colourless, sometimes retaining a little of their hæmoglobin, homogeneous throughout, without obvious envelope.

4. These stromata are to be sharply distinguished from *Schatten*. They are small vesicles consisting of an outer envelope enclosing a fluid and usually two or three exceedingly minute particles of indistinct character. They are derived from red corpuscles, and the envelope is usually regarded, but incorrectly, as that of the red corpuscle. It is, I believe, an artificial product, resulting from a chemical change in the extreme outer portion of the red corpuscle. I have never found it in the blood in health; it is not a product of normal hæmolysis. For its production a degree of acidity of blood is necessary such as is never found as the result of natural disease, and can only be formed by the action of certain destructive agents. The bodies I describe are not to be found in the blood after injection of distilled water, while stromata and colourless spherules are in abundance. They are frequently found, however, in great numbers after the injection of destructive agents such as pyrogallic acid and toluylendiamine, more especially the former.

It was from a study of the distribution of these changes in different organs and portions of the circulation during active hæmolysis induced by these agents that I gained most information regarding both the nature and the seats of hæmolysis.

ACTION OF POISONS.

The substance whose action proved most interesting was toluylendiamine. Like pyrogallic acid, although in a different way and in a different degree, it exercises a well-marked destructive action on the blood. The chief point of interest connected with it is that, unlike pyrogallic acid, its action differs greatly in different animals. It is exceedingly destructive and poisonous in cats, even in small doses—a dose of even 0·15 gramme killing a cat in the course of a few hours with intense hæmoglobinuria. It is less so in dogs, such a dose causing jaundice without hæmoglobinuria; and it is least of all so in rabbits, causing neither jaundice nor hæmoglobinuria even in large doses. In many of my experiments doses as large as one gramme were injected directly into the blood of rabbits with comparatively little effect. The action of this substance on rabbits differs indeed so strikingly from its action on dogs and cats, that Stadelmann, who first studied it, confessed himself utterly unable to account for it, and his observations were therefore exclusively confined to the latter animals. The reason that induced him to reject rabbits was the reason that induced me to make use of them; for the object of my experiments was not to induce a marked destruction of blood, such as is produced in dogs and cats by even small doses of this drug, but to simulate more closely the process which goes on in health. To cause a degree of change in the blood capable of inducing hæmoglobinuria or jaundice was not my purpose, but rather to induce such a slight exaggeration of the process of hæmolysis as would render recognisable evidences of hæmolysis usually hidden or obscure. This object I could not have attained with destructive agents like pyrogallic acid, glycerine or distilled water, for, as I afterwards found, their destructive action differs totally in its character from anything that takes place in health, and that is the case even with the smallest doses. With toluylendiamine, on the other hand, I found myself able to produce all the evidences of an increased hæmolysis without the slightest disturbance of the animals' health, and without the occurrence of any changes (e.g., jaundice, hæmoglobinuria &c.) not usually found attending that process in health. When the dose was small these evidences included slight changes in the blood such as are found in health, with increased formation of bile pigments, and increased deposit of blood pigment either in the liver, spleen, or bone marrow. With larger doses still more marked changes were induced, including in addition to the foregoing some never found in health—viz., appearance of large numbers of stromata and schatten in the blood, and of remains of hæmoglobin in the urine (not hæmoglobinuria). By varying the dose I was thus able in the rabbit to induce the most varying degree of destruction in a manner quite impossible in the dog or cat, where the substance has a poisonous action independent of its destructive action on the blood. Since all my information regarding the seats of hæmolysis, as well as the probable nature of this process in health, was obtained from a study of this drug, I will first record the chief facts I have elicited with regard to its action.

THE SPLEEN THE CHIEF SEAT OF ACTIVE HÆMOLYSIS.

1. After small doses the morphological changes indicative of hæmolysis are confined solely to the spleen, and are absent from the blood elsewhere, even from that within the liver.

Experiment 80, rabbit; 0·25 gramme of toluylendiamine per kilo of weight injected intravenously; killed two days later. Numerous changes—colourless granules and spherules in great numbers, and budding of red corpuscles—in spleen and blood of splenic vein; blood of portal system elsewhere perfectly normal.

2. After a medium dose the changes extend to the blood within the liver, but are still absent from general circulation, both during life and after death.

Experiment 61, rabbit; 0·66 gramme toluylendiamine per kilo injected intravenously. Killed on following day. No change in blood of ear during life, either in plasma or in corpuscles. Well-marked changes in plasma and red corpuscles in spleen and splenic vein, also in liver, but none in hepatic veins issuing from liver, or in blood of inferior vena cava. Large amount of iron in spleen, none in liver. Similar distribution of changes in Experiment 75.

3. With still larger doses the changes extend to the general mass of the blood, but are always most marked in the portal blood, and especially in the spleen.

Experiment 82, rabbit; 0·8 gramme toluylendiamine per kilo. Death in sixteen hours. Great majority of red corpuscles in spleen and splenic vein converted into *Schatten;* only a few normal corpuscles left. In blood of mesenteric veins only a few *Schatten*; majority of corpuscles normal. In hepatic vein *Schatten* still fewer in number; and in inferior vena cava below the liver *Schatten* exceedingly few in number. Spleen gives an excessively deep iron reaction; liver a very slight one. A similar distribution was observed in Experiments 65 and 90 (cat) and 78 (rabbit).

In all cases, then, the greatest degree of change was found in the blood of the portal as distinguished from the general circulation, and especially in the spleen and the splenic vein. Had the changes been always found in the liver as well as within the spleen, one might have referred their presence in these situations to the scavenging function which we have seen is performed by these two organs. As I have shown, however, the stromata and other remains of red corpuscles, after injection of distilled water, are found in greatest abundance in the liver in the foregoing cases. On the other hand, the distribution of the changes was reversed, the spleen being the chief and sometimes the exclusive seat of the various products of disintegration. The greater number and variety of the evidences of hæmolysis in the spleen, as compared with those in the liver or in the blood elsewhere, seemed to point to that organ as the seat of an active hæmolysis.

EFFECT OF REMOVAL OF THE SPLEEN.

To ascertain to what extent the spleen was the seat of an active hæmolysis or how far, on the other hand, it acted merely as a scavenging organ collecting from the blood the various débris circulating in it, I made a series of experiments similar to those already described, having previously excised the spleen.

This operation was exceedingly well borne by the animals; it appeared, indeed, to affect them but little. In my earlier experiments I waited for a day or two after the excision before injecting the drug. Later on, when I found that the operation itself was without any ill effect, I was in the habit of injecting the drug immediately after the spleen was excised. The results of the experiments under these circumstances appear to me all the more remarkable. I illustrated the action of toluylendiamine in the healthy animal by three experiments, in which the doses were respectively 0·25, 0·66 and 0·8 gramme per kilo of weight, doses which I may for convenience term small, medium and large.

1. *After removal of the spleen the destructive action of toluylendiamine on the blood of rabbits, both in small and medium doses, is completely abolished, in large doses is much diminished.*

Experiment 68, rabbit; spleen excised; 0·6 gramme toluylendiamine per kilo injected into blood; killed three days later. Absolutely unaffected during life. No changes found in blood either during life or after death. No remains of hæmoglobin in urine. No reaction of iron either in liver or bone-marrow.

Experiment 69, rabbit; spleen excised; 0·75 gramme toluylendiamine per kilo injected into blood. Killed on following day. Absolutely no change of any kind in blood either of portal or general circulation, or in liver. Liver gives no iron reaction. Urine free from hæmoglobin or its pigment remains.

The effect of removal of the spleen in lessening hæmolysis is evidenced in other ways.

2. *The nutrition is less affected by toluylendiamine in the spleenless than that in the normal animal.*

Thus a dose of 0·66 gramme per kilo in the healthy animal caused a loss of body weight of 150 grammes in two days (Experiment 61); while a dose of 0·66 gramme per kilo followed by one of 1 gramme per kilo five days later in a spleenless rabbit of the same brood caused only a loss of 50 grammes (Experiment 60). Almost three times the dose had caused a third of the loss of weight and that, too, notwithstanding that the animal had been subjected to a somewhat severe operation. Even more striking perhaps was the contrast afforded by other two experiments, in which a total of 0·33 gramme per kilo caused in the healthy animal a loss of weight of 170 grammes (Experiment 43); while the spleenless one, notwithstanding its operation, actually put on 200 grammes of weight in the same period of time, after more than twice the dose—namely, 0·84 gramme per kilo.

In all cases the conditions as to food and drink were alike. In the group of experiments in the healthy animal the dose of toluylendiamine varied from 0·13 to 0·8 gramme per kilo, the average of seventeen observations being 0·36 gramme per kilo. In the spleenless animal the average dose in eight observations was 0·64, ranging from 0·28 to as much as 1 gramme per kilo. Nevertheless, all the characteristic effects of toluylendiamine as a hæmolytic agent, whether as regards changes in blood, in urine, in organs, or in body weight and nutrition, were much more frequently and more strikingly manifested in the healthy animal. In the spleenless one, as has been seen, they were frequently absent.

3. The removal of the spleen lessens the formation of bile pigment. Doses of toluylendiamine, which in the normal animal cause an increased flow of bile and an increased formation of bile pigment, are now without effect (Experiments 69 and 81, in spleenless animals, twenty-four and forty-eight hours, after doses of 0·75 and 0·8 gramme per kilo respectively; no evidence of polycholia; while in Experiment 61, in normal animal, forty-eight hours after a dose of 0·66 per kilo, and even more markedly in Experiment 80, forty-eight hours after a dose of 0·25 per kilo, a large quantity of dark-green bile was found).

4. Removal of the spleen alters the character of the subsequent hæmolysis, rendering it slower and more chronic.

As I have shown, there is no more characteristic evidence of a gradual death of the red corpuscles than the presence of large pigment cells within the capillaries of the liver or within the spleen, even as there is no more striking evidence of a more acute hæmolysis involving the liberation of hæmoglobin into the plasma than the presence of pigment within the liver cells. What I find, then, is that after injection of toluylendiamine into spleenless rabbits large pigment cells are to be found in the capillaries of the liver in number and variety such as are never met with in the healthy animal, or ever otherwise found after toluylendiamine poisoning (Experiment 89).

These experiments seem to me to establish two things—first, the importance of the spleen as a seat, if not the chief seat, of active hæmolysis; and secondly, the relative subordinate *rôle* of the liver in this relation. They show very clearly how little value can, I think, be attached to blood pigment within the liver cells as an evidence that hæmolysis has occurred in that organ; for, as has been seen, it is precisely in this situation that a large excess of pigment is occasionally found as the result of the action of toluylendiamine. How little the liver cells, or even the capillaries of the liver, have had to do with the destruction thus occasioned is now evident, since the removal of the spleen may arrest it altogether.

I conclude then that the pigment found in the liver cells in such cases has been formed from hæmoglobin set free within the spleen. I can see no other way of interpreting these facts. The liver, instead of being the seat of active hæmolysis, has thus merely been concerned in disposing of some of its products, notably of hæmoglobin. I cannot but conclude then that the importance of the liver in hæmolysis—in the actual induction of the destructive changes in the blood—has been much exaggerated. Its *rôle* still remains sufficiently important, since to it belongs the function of getting rid of the hæmoglobin (and doubtless many other products) thus set free, and of preventing their passage into the general circulation.

(To be concluded.)

Clinical Lecture
ON
A CASE OF INTUSSUSCEPTION.

Delivered at the Middlesex Hospital, July, 1892,

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GENTLEMEN,—Few cases in surgery are of greater interest than those of "internal obstruction," under which term we comprehend instances in which the blood-circulation in the piece of bowel implicated is arrested either by some constricting structure, as an adventitious band of inflammatory origin; or by some persistent embryonic structure, as the vitelline duct; or by twisting of the bowel, volvulus; or by the slipping of a piece of bowel through a small adventitious opening in the omentum or mesentery, all of which are strictly instances of "internal strangulation." We include also those instances in which the circulation is brought to a standstill by intussusception; and we also comprise under it those instances where the lumen of the bowel is lessened, as by the encroachment of a neoplasm seated in its walls; and those where the gut is squeezed by pressure made on its outer surface, as by an advancing tumour originating outside it. Authors whose opinions are justly entitled to respect have objected to this wide use of the term "internal obstruction" as wanting in precision, and as placing together in one category cases of very different etiology. This is true, but in the present imperfect state of our knowledge the employment of the term in such wide sense is warranted by the strong recommendation of practical convenience.

The two questions which instantly present themselves in the bedside study of any case of internal obstruction—two questions a correct appreciation of which should govern the line of treatment to be adopted—are the *nature* of the cause and the *seat* of the obstruction. Students as yet without experience, whose knowledge of internal obstruction is drawn only from text-books in which the symptoms regarded as distinctive of the several forms are laid down with a dogmatic clearness that seems to leave little to be desired, will frequently find themselves in much perplexity at the bedside when in very many instances they find that a certain solution of these two questions is unattainable, and one can only arrive at a probability of greater or less degree—a probability which may amount to a strong presumption, or may be a mere conjecture, and which falls far short of a demonstration, of the nature and seat of the trouble. Instances where these can be certainly known beyond possible error before laparotomy are, I think, not numerous. For an example of such prior certainty I may cite intussusception occurring in the large intestine, where the intussusceptum descends into the rectum within reach of the finger, or even passes the anus and comes into actual view. I mention these doubts not to discourage you, but to incite you to ever closer clinical study. In studying such cases the age of the patient may give a clue, since some forms are more common in later, others in earlier, life. Thus obstruction from malignant disease of the bowel is not often met with until somewhat advanced adult life. Bear in mind, however, that exceptions to this do occur sometimes, of which we saw a striking example a few years since, the patient being a youth of sixteen years, under Mr. Lawson's care. Again, malignant tumours of the bowel are much more common in the large than in the small gut; yet within a few years we have seen instances of these in the ileum and in the duodenum. Again, obstruction due to malignant tumour of the bowel is usually gradual and insidious; yet in the case to which I have just referred the history obtained was that of an acute illness of only a few days' duration. Intussusception is more common in childhood and youth than later, but many cases have been verified in persons of middle and advanced age. In the time at which vomiting begins some have thought to find a hint as to which part of the intestinal canal is involved. Thus early vomiting has been supposed to indicate obstruction situated in the upper part of the canal, and the converse; yet occasionally vomiting has been noticed as one of the first symptoms when the obstruction has been situated at the lower end of the intestinal canal. A case which I saw in consultation with Mr. Lawson and a medical colleague was a good example of this. The patient, a young woman, had symptoms of acute obstruction of about seven days' duration. Previously in good health, whilst in the act of lifting a heavy weight, she experienced great pain in the lower part of the abdomen. She soon began to vomit, and this was continued, being distressingly urgent at the date of her reception into the hospital. An examination of the rectum revealed its complete blockage, its anterior wall being squeezed back against the sacrum by a large mass external to and in front of the gut; a vaginal examination showed this to occupy Douglas's pouch. Of doughy firmness generally, at one spot this mass was softer, and here fluctuation was thought to be detected. An exploratory puncture proved it to be a suppurating hæmatoma, the contents of which were evacuated by an incision, when all the symptoms of obstruction disappeared and the woman quickly recovered. Pain, when localised and fixed, has been thought to denote with some approach to certainty the situation of the obstruction; but I can recall a case in which the pain was referred to the inguinal region, and the obstruction was found to be in the upper part of the jejunum. The form of internal obstruction to which I particularly ask your attention to-day is intussusception, a typical example of which has very recently been under your observation. The following is a précis of the case, abridged from the dresser's notes.

A plumber, aged seventeen years, was admitted into Founder ward on July 17th, 1892, in a state of extreme collapse. The surface of his body was distinctly cold. His eyes and cheeks were sunken. His pulse was rapid, very small and weak. He vomited frequently; the ejecta had a fæcal smell and appearance. His abdomen was excessively distended, its parietes tense and hard. The right inguinal region and flank seemed to be rather more resistent than other parts. No stools or flatus had been passed since the beginning of his illness one week previously. The patient's calling—a plumber—had led to his condition being mistaken for lead colic, but at the time he was received into the hospital his symptoms unmistakably pointed to an acute internal obstruction. His excellent health previously and the absence of any history of an antecedent peritonitis discountenanced the idea of constriction of gut by adventitious bands of inflammatory origin; whilst his age and the acuteness of the attack, unfavourable to the supposition of malignant tumour, suggested volvulus or intussusception, the absence of tenesmus and of the expulsion of mucus and blood per anum (so often characterising intussusception) appearing to favour the supposition of a volvulus. As laparotomy offered the only chance—though in his desperate condition a very slight one—of saving his life it was proposed, and, as he acquiesced, immediately done. The abdomen was opened by an incision between the umbilicus and pubes, and in the right inguinal region there was quickly found a firm cord-like object of about twice the calibre of a goosequill and about three inches long. This, at first taken to be a band or perhaps a long slender diverticulum or persistent vitelline duct, when traced was proved to be continuous at one end with distended small intestine, and at the other end to be continuous with a considerable intussusceptum, which, together with the sheathing bowel, formed a stout cylindrical mass nearly ten inches in length. The intussusceptum could not be drawn out, but it was in greater part easily extruded by gentle kneading pressure applied to its further end, until a mass about three inches in length only remained. This seemed so tightly engaged that its extrication might involve risk of laceration, it was therefore brought outside the abdomen, and sponges having been carefully packed around it so as to prevent the entrance of fæcal matter into the peritoneal sac if the gut should be ruptured, and the fixity of the gut having been ascertained not to be caused by strong agglutination of the opposed peritoneal surfaces, the disengagement of the intussusception was cautiously proceeded with and soon effected. This was, however, not accomplished without the occurrence of three small rents in the peritoneal tunic, which were closed with a fine silk continuous suture. The intussusceptum, after its extrication, assumed a bright, florid-red hue. It was replaced in the abdomen and the incision was closed and dressed in the usual antiseptic manner. Before administering the anæsthetic the stomach was first emptied by the resident medical officer with a syphon of its foul, fæcal contents and then flushed out with a watery solution of boracic acid; and a hypodermic injection of ether was given to combat the extreme depression. This depression continued through the night, but towards morning (July 18th) it seemed to be

rather less, and the vomiting also was less. This apparent improvement lasted till midday, when his strength failed and death occurred at 5 P.M., about twenty-four hours after the laparotomy.

At the necropsy made on the following day marks of a widely diffused slight general peritonitis were found, and in the neighbourhood of the lower part of the ileum and cæcum signs of more intense inflammation. The lowest three feet of ileum were intensely congested, their outer surface coated with flakes of coagulated lymph and of a slaty hue. This part of the gut was matted together and between the coils was a little blood clot. At the distance of ten inches from the ileo-cæcal valve was a part of the gut more deeply discoloured, and on separating this a small aperture was found from which fluid fæces ran out. As no fæcal matters were observed already extravasated it was inferred that this opening was made by the mechanical tearing of the gut at a sloughy spot in its removal. Close to this was a polypus of the size of a damson, attached to the mucosa by a rather wide base. For an extent of six inches below this the inner surface of the gut presented several patches, yellowish, raised and granular in aspect (as of puriform infiltration?), occurring mostly in bands the long axis of which was transverse to the length of the gut. In addition to these were a couple of small superficial sloughy spots. Note, now, two circumstances which make intelligible the occurrence of the intussusception: (1) the presence of a polypus through which a drag would be exerted on the gut by the peristalsis which passes on its contents, and (2) the tetanic contraction of the gut above the polypus which favoured its invagination when pulled on. Without such reduction of size of the entering gut traction on it through the polypus might have been inoperative; and the frequently verified absence of any such assignable mechanical factor as a polypus hints that, given such great inequality of size as that due to spastic contraction of gut, peristalsis of a neighbouring portion may alone suffice to bring about invagination. Note also the florid reddening of the gut when disengaged, so strikingly resembling that occasionally observed in herniotomy when the constriction is removed, and also like that with which you are all familiar—the blushing of the integument on the removal of an Esmarch's elastic bandage from a limb. This it was which gave expectation of restoration of the circulation within the gut, so that it was unhesitatingly replaced within the abdomen. Yet at the necropsy sloughy patches were found in the gut, and had the lad survived a little longer, on the separation of such sloughs, extravasation would hardly have remained absent. His desperately collapsed condition made it urgent to operate rapidly; had sloughs in the gut been present and recognised during the operation, the time required by excision of the irreparably damaged gut and reunion of the ends with suture would not have permitted the adoption of this course, and all we could have done would have been to bring out the ends and secure them in the abdominal wound, thus making an artificial anus, which, had he survived, could have been dealt with later. That which in this case is truly regrettable is that laparotomy was not done earlier. In acute "internal obstructions" the aphorism so pertinent to acutely strangulated (external) herniæ—that delay is a greater danger than is the herniotomy itself — is equally applicable. If recognised in quite an early stage a short time may be spent on inflation, and the measures you will find in medical text-books; but let such time be short, and in the event of minor measures not speedily proving successful, turn promptly to laparotomy with confident expectation of a smaller mortality. Delay and an expectant inaction, leaving such cases to nature, will, it may not be doubted, occasionally terminate in recovery after exfoliation of an intussusceptum and its passage per anum; but bear in mind that such a recovery is not always permanent, and that after an interval the contraction of the cicatrices may lead to renewed obstruction and to death, of which I have known in my own experience more than one example.

Old Burlington-street, W.

NEW HOME FOR THE DYING AT BRADFORD.—A committee has been formed for the purpose of opening, in connexion with the Samaritan Home at Bradford, a home where poor women in the last stages of any non-infectious disease will be cared for in their last days, that their passage to the grave may be rendered as peaceful as medical skill and good nursing can make it. Appeals for funds are being made by the committee, it being their intention to open this home, if possible, early in the new year.

A CASE OF DOUBLE HEMIPLEGIA WITH BULBAR SYMPTOMS.

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THE patient whose case is here narrated was under the care of Dr. Hughlings Jackson at the National Hospital for the Paralysed and Epileptic, Queen-square. He was first admitted on May 10th, 1889. The following particulars are from the notes of Dr. Risien Russell.

The patient, R. N——, aged fifty-two, suddenly became giddy whilst walking in the street in September 1888. He also lost the use of his left side at this time and had difficulty in talking and in swallowing. His mouth is said to have been drawn to the *left*. He could not protrude his tongue. The unilateral loss of power gradually passed off, but he has had slowly increasing difficulty in articulating and swallowing. He is said not to have been able to make himself understood at all for four weeks after the attack, and he could swallow only liquids and semi-solids. Food was apt to "go down the wrong way," and on account of this and the "phlegm" which accumulated in his throat he not unfrequently had choking attacks. Five years before he had a similar attack, but then the loss of power was on the *right* side. He is said to have lost the ability to articulate for a week, and then to have gradually but perfectly recovered this power. There was also improvement in the condition of the paralysed limbs, but slight weakness of the leg remained and this was present when he was admitted in 1889. His wife observed nothing peculiar in his talking, nor had he any difficulty in swallowing before the last attack. She is quite sure that the onset of the first attack, as well as of the second, was sudden. There is nothing of consequence in his family history, but a significant incident in his previous personal history is an attack of gout ten years ago. When admitted he complained of difficulty in swallowing and inability to talk distinctly, and examination revealed the following conditions. As regards the face no notable difference could be detected between the two sides when the eyebrows were raised and in frowning, but in trying to close the eyes firmly the left orbicularis palpebrarum was seen to contract less firmly than the right. In showing the upper teeth the left upper lip was imperfectly raised. The tongue turned to the left on protrusion. There was complete paralysis of the palate, the two sides remaining quite immobile during phonation. Its tactile sensibility was preserved, but its reflex irritability was abolished. There was no paralysis of the vocal cords. These observations on the tongue, palate and vocal cords were confirmed by Dr. Semon. The tongue and muscles of the palate responded actively to faradaic stimulation. The neck movements were well carried out without pain. There was no wasting of any muscles. Movements of the box of the larynx during both respiration and deglutition did not seem to be affected. No wasting or fibrillary twitching was observed in any of the trunk muscles. The arms were fairly well nourished, and so were the small muscles of the hands. There was no fibrillary tremor, and movements were carried out steadily and exactly except that there was slight inaccuracy in touching different parts of the face with the fingers of the left hand when the eyes were closed. The grasps were feeble as tested by the dynamometer—viz., right = 60, left = 50, an ordinary right-handed grasp being about 120 on the same instrument. The triceps and wrist-jerks were well marked and equal on the two sides. There was no local or general wasting of muscles in the legs, and movements were fairly carried out as he lay in bed. No sign of unilateral weakness was evident in his gait, except slight stiffness in the right leg. The plantar reflexes were excessive but equal, both knee-jerks were exaggerated, the right being more active, and slight ankle clonus was obtained on the right side, none on the left. The sphincters of the bladder and rectum were unaffected. Sensibility was quite normal on face, trunk and extremities

As regards special senses, there was no impairment of taste or hearing. He could not smell assafœtida, but he said that his smell had always been defective. His sight with glasses was fairly good. There was marked inequality of pupils, the right being the larger. Both reacted to light and during accommodation. Ocular movements were all carried out well and there was no nystagmus. The following is Mr. Gunn's note on the fundi: "Both optic discs have their edges ill defined, but exhibit no swelling. The veins are considerably congested and the arteries silver-wire like. In the vicinity of the disc in both eyes there are numerous hæmorrhages, chiefly in the nerve fibre layer, but in the right eye there is a guttate one which is probably deeper. There are one or two roundish whitish spots, either due to fatty change in the retina or to old hæmorrhages. Ophthalmoscopical examination points to albuminuric retinitis." There was no aphasia and no impairment of the ability to read and write, but great defect of articulation. He was just able to make himself understood. He could not blow out his cheeks when he attempted to do so, as the air rushed through his nose. He was unable to whistle, although he could formerly. The heart's apex was in the left fifth space in the nipple line. No murmur was heard, but the second sound at the base was accentuated. The arteries were tortuous and the radial could be rolled under the finger. The pulse was of high tension but regular. The chest was barrel-shaped and the costal angle broad. Movements were feeble, but equal on the two sides. Respiration was mainly thoracic as he lay in bed. It was regular. Respirations were twenty-four per minute. Expiration was prolonged, but there were no accompaniments. He complained of difficulty in coughing and of inability to "bring up phlegm." No abnormality was discovered in the liver and spleen. The urine was clear, pale, faintly acid, with a specific gravity of 1010. It contained no sugar, but boiling showed the presence of a copious cloud of albumen. As regards his psychical condition he was very emotional, and laughed and cried easily and without apparent cause, and he could not stop himself from doing so.

The patient's condition remained unchanged during the time he was in hospital, except for some fluctuation in the quantity of albumen present in the urine. He was discharged on September 22nd, 1889, at his own request. On November 20th of the same year he was readmitted, and the following additional particulars of his condition at that time are taken from the notes of Dr. George Wilson, who was clinical clerk of the case. The breathing was husky and the patient complained of his inability "to bring up phlegm." On attempting to cough there was almost no result; inspiration was imperfect and the expulsive part was very feeble and jerky. The voice was rough, husky and nasal. Cotton wool placed in front of the nose was blown whenever he phonated He could not keep up a prolonged effort of vocalisation. Thus he could not say "Ah" for more than four seconds without taking a breath. The pitch and volume of his voice were greatly impaired. In talking it frequently sank to a whisper and sometimes an attempt at phonation ended simply in a gasp. When he tried to shout as loudly as he could the result was a groan. Articulation was very defective, the defect being intensified, and the difficulty in understanding what was said being increased, by the roughness of the voice and the patient's uncontrollable laughter. He could pronounce very few of the consonants correctly; the sibilants were lost so that he could not hiss. He could not roll an "r." The words he uttered best were "no, no" and "Mama." As to explosive consonants, the following was the condition:—1. Voiceless explosives,—as initials p, t, and k, were preceded by the corresponding nasal. Thus "pea" became "mpea," "tea" became "ntea," and if often repeated, "nea;" "kay" became "nkay," and if often repeated apparently "kaying, kaying, kay." If the nostrils were closed he could say "pea" and "tea" correctly, but there remained some difficulty and indistinctness about "kay." As finals, these consonants were frequently correctly articulated. He could pronounce "up," "eat" and "tick" correctly. 2. Voiced explosives. As initials these had the nasals introduced in front of them, "band," "door" and "game" becoming "mband," "ndoor" and "nggame." On repetition "bah" became "ma," "day" became "nday," "gay" became "nggay." If the nostrils were closed "band," "door" and "game" were pronounced correctly. As finals, these were also modified "rub" becoming "rum," "head," "en" and "egg" always "heng." All these peculiarities were intensified when the patient became a little fatigued. There was no aphasia, and ability to read and write was preserved. The condition as regards swallowing was almost the same as formerly, the act being if anything accomplished with greater ease. In other respects, as regards motor and sensory power, the condition of the kidneys and other organs, little or no difference was to be made out and the patient continued as emotional as before. The vocal cords continued to act well. There was no marked change in the patient's condition during the months which followed, until March 11th. He was able to be up and about all day, at one time laughing almost continuously, at another crying as persistently. On the morning of the 11th March, he suddenly lost consciousness and quickly passed into a condition of coma which ended fatally in a few hours.

The necropsy was made by Dr. Walter S. Colman, who also made the microscopical examinations we shall mention; we are indebted to his notes for the following particulars. On removing the brain a considerable quantity of blood recently effused was found spread out in the subarachnoid space over the pons, medulla and the inferior surface of the cerebellum. This blood came from a rent in the roof of the fourth ventricle. Blood had also escaped from a rent in the corpus callosum. On making horizontal sections at the level of the basal ganglia the lateral ventricles were found distended with blood. The hæmorrhage had apparently had its starting-point in the anterior part of the left lateral ventricle, where it had extensively ploughed up the white matter and the basal ganglia. There was a mass of blood-clot in this region the size of a fist. It had passed into the third ventricle and along the iter, ploughing up the centre of the pons. The finger could be easily passed into the fourth ventricle in this direction. All the vessels at the base were extremely atheromatous. The kidneys were in an advanced stage of granular contraction, and the left ventricle of the heart was hypertrophied. Microscopic examination of the cord and medulla after they had been hardened in Müller's fluid showed extensive degeneration of the pyramidal tracts on both sides from the crura downwards. The degeneration was more extensive on the left side of the cord than on the right, and diminished as the lower levels were reached. The hypoglossal nuclei were normal, the outline of the cells being clear and distinct. The extensive destruction which the fatal hæmorrhage caused rendered the detection of any old lesions in the cerebral hemisphere impossible. From the account of the condition present during the time the patient was under observation, it will be seen that the symptomatology presented a picture resembling that of ordinary progressive bulbar paralysis. Yet the differences, although slight, were sufficient, especially having regard to the history of the case, to enable Dr. Hughlings Jackson to predict a double lesion higher than the bulb. The existence of symptoms usually associated with bulbar disease in cases in which the lesion is a cerebral one has been long recognised. The first record of such a case is by Magnus,[1] and is that of a patient who had paralysis of the facial muscles and of the tongue, with constant dribbling of saliva, and in whom what is called "speech" remained completely in abeyance after a second attack of left hemiplegia. In this case only a single lesion in the right hemisphere was discovered post mortem. There is a very important case recorded by Dr. Barlow.[2] It was that of a boy with aortic disease who had first an attack of right hemiplegia and later one of left hemiplegia. When he came under observation after the second attack his limbs were weak and wasted, but the muscles reacted well to faradaism. He was unable to protrude his tongue, but there was no wasting of it, and there was no paralysis of the palate. There was some difficulty in swallowing, but no regurgitation of food. He could not talk, but he understood signs. He was very emotional, and, to quote the report, "he cried like a man with senile softening whenever he was spoken to." At the necropsy there was found to be plugging of both the middle cerebral arteries, and there were areas of softening almost symmetrical at the lower end of the ascending frontal and the hinder end of the middle and inferior frontal convolutions. Similar cases have been recorded by Lepine,[3] by Jolly,[4] by Eisenlohr,[5] by Kirchoff,[6] by Ross,[7] by Miss McNutt,[8] and by Fuller and Browning[9] so that the condition is well recognised.

[1] Müller's Archiv, 1837.
[2] Brit. Med. Jour., vol. ii. 1877.
[3] Revue Mensuelle de Méd. et Chir., 1877, p. 909.
[4] Archiv für Psychiatrie, Bd. iii., 1872, p. 772.
[5] Ibid., Bd. ix., 1878, p. 43.
[6] Ibid., Bd. xi., 1881, p. 132.
[7] Brain, vol. v., 1882.
[8] American Journal of the Medical Sciences, 1885.
[9] New York Medical Record, Nov. 1st, 1884.

In the case of R. N——, recorded in this paper, the important points in regard to diagnosis were the distinct history of two separate attacks of hemiplegia, the absence of the usual wasting of the tongue and of the "squirming" movements which are present in it in bulbar paralysis, and the absence of fibrillary twitching in other parts. On the other hand, the peculiarity of the articulation resembled what occurs in ordinary bulbar paralysis, and the difficulty in swallowing was the same. The emotional condition also was extremely suggestive of the lower lesion. With regard to the condition of the chest movements, it is very difficult to determine how much of the weakness is due to paralysis in a case in which there is emphysema. In this case the chest was emphysematous, and it is on that account probable that a good deal of the chest weakness present was a result of this. This weakness of the chest no doubt accounted for the feebleness of the voice and the difficulty there was in sustaining it, for the vocal cords moved freely and correctly, and what difficulty there was must therefore be ascribed to imperfect bellows action. The difficulty of articulation was of course a different thing, being the result of the paralysed condition of the palate. The conditions which were present in this case find an explanation on Dr. Broadbent's hypothesis,[10] that bilateral movements habitually associated are represented in each half of the cerebrum. This hypothesis has been verified experimentally by Beevor and Horsley,[11] at least as regards certain bilaterally associated movements, such as those of pouting with the lips, mastication, swallowing and adduction of the vocal cords, and further experiment will probably show that it is true of many other movements. In our patient's case, after the first attack of hemiplegia the articulation dependent upon the condition of the palate would be, if at all interfered with, only temporarily so, on account of the preservation of the path on one side. When, however, the second lesion came on the opposite side there was no third path by which impulses could travel to the periphery, and the peripheral mechanism of articulation was consequently rendered inactive, the amount of inactivity being proportioned to the completeness of the interruption. A similar explanation applies to the condition of the chest movements, if the deficiency in those is to be ascribed to anything more than emphysema. It is unfortunate that the fatal hæmorrhage was so extensive as to make it impossible to localise the lesions which caused the two attacks of hemiplegia, but that the case was one of double hemiplegia and not of bulbar paralysis is, we think, sufficiently proved by the double descending degeneration visible above the level of the medulla, and by the healthy condition of the cells of the bulbar nuclei. The bearing of the abnormal vascular condition, of the renal disease, and of the state of the fundi is too obvious to need comment.

THE TREATMENT OF SEVERE CASES OF CLUB-FOOT.

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AT a recent meeting of the Royal Medical and Chirurgical Society Mr. Edmund Owen raised the vexed question of the surgical treatment of severe congenital club-foot and advocated Phelps' open incision as the best method for the cure of the affection. I am entirely in accord with Mr. Owen in thinking there are many cases of club-foot which cannot be effectually dealt with merely by tenotomies and mechanical extension. During my charge of the orthopædic department at St. Bartholomew's Hospital for the last ten years I have met with many such cases; and although I have had them in the wards for months under my own daily personal supervision I have failed to cure them by these means alone. Some of these cases had been under my own care from the first; but others were relapsed cases that had previously been treated at general and special orthopædic hospitals. I am not convinced, however, that Phelps' open method is the best way of treating these severe cases—indeed, in some of the cases in which I have operated I am sure that without the removal of portions of bone the foot could not have been corrected. For even after, say, the astragalus or a wedge-shaped piece of the tarsus had been excised, although the ligaments and tense structures on the inner side of the foot were freely divided from within the wound, it was not until much more bone had been taken away than I intended when I commenced to operate that the foot could be brought into a fair shape and useful position. In less severe grades than these, when the ligaments and other tense structures on the inner border of the foot and sole have been completely cut through down to the bone, whether by Phelps' open method or by Parker's subcutaneous operation, the foot can be brought into a line with the leg; but it is only at the expense of inserting, as Mr. Owen puts it, a wedge of space between the astragalus and scaphoid on the inner side and a less sized wedge of space between the os calcis and the cuboid on the outer side. Now herein I think lies the weakness both of Phelps' and of Parker's operations. I am not so sure that this wedge of space becomes filled up by granulations, and ultimately by a firm cicatricial pad, as Mr. Owen seems to believe. The condition of the foot after the operation appears to me to be analogous to what occurs after the division of the tendon of the biceps and external lateral ligament for the cure of knock-knee. After these structures have been severed the leg can be brought into a straight line with the thigh, and as long as retentive apparatus is worn the knock-knee appears cured. The down growth of the inner condyle, however—the root of the evil,—has remained untouched, and the rectification is only attained by the insertion, again to use Mr. Owen's words, of a wedge of space between the external condyle of the femur and the corresponding tuberosity of the tibia. This space is not filled up, and when the retaining apparatus is left off—and I am speaking from experience—the knee falls back into the position of genu valgum. I cannot help fearing that the same thing will happen after Phelps' operation, that the new fibrous tissue formed between the divided ligaments and soft parts will draw as it contracts, as all new fibrous tissue will, the deformed and displaced bones back into their faulty position. During the discussion on Mr. Owen's paper Mr. Brodhurst said that the bones were not at fault, and that he had never seen a case in which they were so deformed as to interfere in the slightest degree with the reduction of the deformity. His experience therefore must be contrary to that of most general surgeons. In the museum of St. Bartholomew's Hospital there are now quite a number of deformed astragali removed by my colleague, Mr. Willett, and by myself from severe and intractable cases of club-foot, and illustrations of deformed bones are given in most of the works on Orthopædic Surgery. Indeed, since Mr. Adams drew attention to the condition of the astragalus in his work on Club-foot I was under the impression that it was generally recognised on all hands that in severe cases the deformity and alteration in the articular facets of the astragalus and os calcis were often well marked, and in the case of the former bone sometimes extreme. Seeing therefore that in Phelps' operation the deformity of the bones and the alteration of their articular surfaces are not dealt with, it seems to me that we shall be very liable to have relapses. My own experience of the operation has been insufficient for me to say definitely whether such is or is not the case; and although I have heard from others that relapses after Phelps' method are not uncommon, such cases have not hitherto made their way to the orthopædic department. I admit that the objection I have just raised to Phelps' method may be only theoretical, and time alone can prove the value of the operation.

In some severe cases there is an objection to Phelps' operation which I venture to think is not theoretical. In the class of cases I refer to the equinus position is more marked than the varus, and on attempting to bring the foot up to a right angle after division of the tendo Achillis, and even the posterior ligaments of the ankle-joint, the astragalus is felt to lock against the tibia and fibula. In these cases, as I think I have proved both by dissection and by operations on the foot, the equinus does not depend, as is usually taught, on a mere tilting of the trochlear surface of the astra-

[10] One of us (J. H. J.) wrote as follows in the *Medical Times and Gazette*, Aug. 15th, 1868: "Moreover, it will be found, I think, that cases of double hemiplegia confirm Broadbent's hypothesis. With regard to this, however, I will content myself by urging those who observe defective bilateral movement with hemiplegia, particularly difficulty in swallowing, to inquire carefully if the patient had not been previously affected on the other side. Again, at a necropsy on a patient known to have been paralysed of but one side, and who had had difficulty in swallowing, we should search both sides of the brain for evidences of disease. For it is a fact that much of the motor tract may be destroyed without the production of hemiplegia, or, at all events, without permanent hemiplegia."

[11] Philosophical Transactions, 1890.

galus out of its socket, but on an abnormal downward as well as inward deflection of the neck. The inward deflection has been long recognised; the downward deflection has not, I think, received the attention it deserves. The reason why the equinus cannot be overcome in these cases after division of the tendo Achillis and the posterior ligaments is that the astragalus is already more or less in normal contact with the tibia and fibula, and further attempts at dorsi-flexion merely wedge the broader anterior surface between the malleoli. To cure the equinus, I hold, either the head and downwardly deflected neck of the astragalus, or in some cases the whole of the astragalus, and often other portions of the bone as well, must be removed. After the excision of the astragalus I have still found that the os calcis or other of the tarsal bones have locked against the external malleolus, and it has not been till parts of these bones have been removed or the external malleolus has been divided and bent backwards that the foot could be placed at a right angle to the leg. When the condition of the astragalus is present it is evident that the mere division of the ligaments and tense structures on the inner side of the foot and even in the sole will be quite futile for correcting the equinus.

In advocating some form of tarsectomy in severe cases I wish it to be understood that no one holds more strongly than myself that these severe cases, like large stones in the bladder, should never be allowed to occur. I have always taught that though I firmly believe these intractable grades of the deformity can only be cured by tarsectomy, at the best it is but a bad job. The foot, after removal of bone, is of course an imperfect member, but at the same time a useful one, and for out-patients to whom the expense of continually wearing apparatus is a great consideration the advantage of being able to dispense with irons is an immense gain. To my mind the moral of the whole question is the importance of undertaking the treatment of club-foot at the very earliest possible period. At birth the bones consist of little more than cartilage, and during the first few months of life can be readily moulded and made to take almost any shape. I have always looked up to Mr. Adams as my teacher in all things orthopædic, and although I differ from him as regards the question of tarsectomy I have hitherto, in the treatment of club-foot in infancy, followed out his method of correcting the varus before attempting to overcome the equinus, and I am bound to say with excellent results. I agree with Mr. Owen that in slight cases the division of the tendo Achillis is often all that is required in the way of operation, but I have certainly found it of benefit to correct by plaster-of-Paris or other mechanical means the varus before doing so.

Weymouth-street, W.

SIMULTANEOUS DISLOCATION AT THE SUPERIOR AND INFERIOR RADIO-ULNAR ARTICULATIONS.

BY T. W. M. LONGMORE, M.R.C.S., L.R.C.P. LOND.

A STEWARD on board a cargo steamer, aged twenty-one, was admitted to the Lady Strangford Hospital, Port Said, under my charge, in June, 1891. He was suffering from the unusual accident of a dislocation of the head of the radius forwards and of the lower end of the ulna backwards. As the causation and symptoms of this uncommon condition were very clear and exact, it seems worth recording. The patient while carrying a dish in his right hand during stormy weather tripped over a ring bolt. He pitched forwards on to the deck, falling upon his right hand, with the injured arm twisted under his body. The radial side of his hand came into contact with the deck, with the wrist bent and the hand pronated; while the weight of his body fell chiefly upon the outer side of the forearm. He felt "something give way," and found he could not flex or extend the elbow-joint, which was fixed in a semi-flexed position. The arm was pulled about by one of the engineers, and afterwards he was able to move the joint more freely. It was then roughly bandaged and put in a sling until he came to the hospital, four days after the injury. On admission, the patient was suffering very little pain or even inconvenience except from inability to use the right arm. The forearm was semi-flexed and the hand pronated. There were only slight swelling and deformity discernible about the elbow-joint, but when the joints on the two sides were compared a flattening of the outer aspect of the forearm was noticed near the joint, over the position normally occupied by the head of the radius. The bend of the elbow was full, and on palpation a hard swelling was easily felt just to the outer side of the tendon of the biceps, against which it was pressed. On rotation of the radius this swelling was felt to move, and there was absence of movement in the normal position. Crepitus of a creaking character was felt and heard on rotation, but not on simple flexion of the joint or pressure on the radius alone. Passive movement or palpation about the elbow-joint caused very slight pain, but movement of the wrist, especially supination, was painful. The lower end of the ulna was decidedly prominent behind and there was an unusual depression between it and the carpus in front. The end of the bone could be pressed into its normal position with an audible click, but it returned as soon as pressure was taken off. On pronation or supination of the hand the same movement of the end of the ulna took place. When the radius was fixed and the ulna moved forwards and backwards the latter felt perfectly loose and could be separated from the radius and carpus with ease.

After the full administration of chloroform the head of the radius could be felt quite easily resting against the humerus in the bend of the elbow. With skilled assistance attempts were made to reduce the dislocation by fixing the humerus and steadily extending the forearm. At the same time pressure and manipulation over the head of the bone were tried. Then after full extension the forearm was flexed on the arm, at the same moment as downward pressure was made on the head of the radius. Rotatory movements of the radius during both extension and flexion were also tried. Although there was complete relaxation of muscles, yet the position of the head of the bone could be only slightly altered, and at no time did it regain its normal position. There were no signs of fracture or other injury about the elbow-joint, but it did not seem justifiable to make further or more violent efforts at reduction. So the attempt was relinquished and the arm put up in an angular splint midway between pronation and supination. A straight splint was put along the outer side with a pad pressing on the lower end of the ulna, while a similar splint and pad were made to exert pressure on the head of the radius. The splints were kept on for three weeks and were re-adjusted at the end of each week, when passive movements of the elbow, wrist and finger-joints were made. There was no tendency for the lower end of the ulna to become firmly fixed, so after the splints were removed a bandage and a couple of pads were worn. To restore the muscular power, friction, cold douching and graduated exercise were ordered. As there was no pain all movements were increased and the patient instructed to lift a daily increasing weight from the floor. After five weeks he left the hospital with a very useful arm. Flattening of the outer side of the forearm and fulness of the bend of the elbow were still apparent. Flexion of course was not complete, but he could button his clothes and feed himself. The chief discomfort arose from the condition of the ulna, but when it was properly bandaged inconvenience was only slight.

Cases of these dislocations occurring separately are quoted in "Holmes' System of Surgery," "Spence's Lectures" and the celebrated work on "Dislocations and Fractures" by Sir Astley Cooper. In the last-named work a series of cases of dislocation of the head of the radius forwards are given in detail. In five of these the dislocation was reduced successfully, in six it remained unreduced. In the same work it is said that "luxation of the lower end of the ulna backwards is the result of a sudden and violent pronation." The age of the patient agrees with that given in most of the recorded cases, and the fact of his being a delicate, lightly built lad, with very loose joints, would render dislocation more likely to occur than fracture. The occurrence of the double dislocation was doubtless aided by his right hand being engaged at the moment of his fall, and so, being caught off his guard, he was not quick enough to put it into the usual protective position involuntarily assumed while falling. When it is considered that the annular, the capsular, the oblique and the sacciform ligaments connecting the radius and ulna were, in all probability, ruptured, and the two bones only connected by the interosseous ligament, it is wonderful that the result of the accident was not more unsatisfactory.

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CHRONIC RHEUMATIC ARTHRITIS.

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WITH respect to the subject of rheumatic and rheumatoid arthritis, which I have frequently discussed in the columns of THE LANCET, the following case may prove of interest as exemplifying the distinctions originally drawn by Mr. C. T. Griffiths and myself—viz., that one disease, rheumatic arthritis, is an affection of rheumatic origin, local in character, in which the neural element is absent; and the other, rheumatoid arthritis, is a general disease of debility, having no connexion with rheumatism, in which the neural element plays a conspicuous part, and which occurs in cases with strong hereditary histories of gout and struma or phthisis, and in which the last stage is osteo-arthritis.

The patient, a female aged forty-three (father living and healthy, aged seventy; mother died of paralysis, aged sixty-four; two brothers and six sisters all living and strong), was healthy and well till nineteen years of age, when she had subacute rheumatism (attributed to sleeping in a damp bed), which hardly confined her to bed, but she felt pain and stiffness in her knees, shoulders, elbows and thumb-joints. These joints never got better, but remained stiff and painful after the attack, she feeling every change in the weather. This is a strong rheumatic symptom, for in rheumatoid arthritis the weather does not affect the course of the illness to the same extent, and patients will frequently say they feel better in damp or cold weather. She had subsequent subacute attacks in which more joints suffered until every joint got affected, with the exception of the temporo-maxillary articulation, and she ultimately became quite bedridden and has remained so for twenty years. The catamenia came on at fourteen years, and continued regularly. No phthisis or gout in the family history. Every joint is firmly and rigidly ankylosed, not even the slight movement which can nearly always be obtained in the ankylosis occasioned by osteo-arthritis (the last stage of rheumatoid arthritis), in which case the ankylosis is caused by obstruction to movement by bony outgrowths. The joints are stiffly fixed; no increase in the size of a single joint beyond an apparent enlargement due to wasting of the limbs, which now are so emaciated that they present the appearance of merely skin and bone. The only joint at present in which there is any movement is the jaw, and that is healthy. She some years ago, when not quite so helpless in the spine, used to take care of her sister's child, and alter its position by raising it with her teeth, but now she cannot even turn her head. The joints of the limbs nearly all contracted, elbows at right angles and close to side; knees also bent up, and fingers contracted in palm of hand; skin healthy, colour good; no great anæmia; heart fairly normal, but slight mitral bruit; pulse 60 to minute; bowels opened only once a week, and then only with the aid of an enema or aperient; general health good; eats fairly well, and seems cheerful, frequently singing to the children; and, strangely enough, she is plump in the face, the muscles of which do not appear to be wasted; feels well, except in the springtime of the year; urine, sp. gr. 1020; sugar absent; albumen absent; reaction acid; oxalates absent; small quantity of mucus; passes about 300 gr. of urea daily.

The following interesting points show the difference between the two conditions chronic rheumatoid arthritis and chronic rheumatic arthritis[1]:—1. Family history reveals an utter absence of gout and phthisis, which I have always asserted are found in that of rheumatoid arthritis. 2. No nervous symptoms, neuroses, formication, tingling of limbs, sweating, numbness, pigmentation of skin, and no constitutional symptoms—simply a joint affection; and although every limb is wasted, there is no evidence of general organic progressive disease, as in rheumatoid arthritis, where the muscular atrophy is one of the earlier symptoms, and as a rule precedes the joint affection. 3. Character of joints affected: all firmly ankylosed, with no enlargement, but of course apparently so, owing to the wasting of the surrounding structures; no effusion, and there are absolute flexion and fixation in this case. Flexions of joints in the vast majority of cases are of rheumatic origin, while in rheumatoid arthritis frequently the fingers are hyperextended, but this is not the rule. The character of the joints affected in rheumatic arthritis contrasts strongly with the condition of the joints in rheumatoid arthritis, where the joints are always swollen, with a sensation under the fingers, as if of fluctuation, the swelling commencing some distance above the joint and terminating some distance below it, and always of a more or less spindle-shape. 4. In this case the temporo-maxillary is the only articulation exempt, oddly enough bringing evidence to prove the correctness of my view, that this joint plays an important part in the differentiation between these diseases,[2] where I pointed out that in rheumatoid arthritis the joints most used are the first to go; and, as everyone must talk and eat, this joint never enjoys a lengthened period of repose, and therefore is frequently the seat of the disease, while in rheumatic arthritis it is rarely affected. 5. Her good spirits; not so in rheumatoid arthritis, when depression is an early and constant feature. 6. The symmetry of the joints affected is another point of distinction but that is not essential in this case, as nearly every joint in the body is affected. 7. No marked anæmia, which is so prominent a symptom all through rheumatoid arthritis. 8 Slight mitral bruit, but slow acting heart, soft pulse In

rheumatoid arthritis the heart's action is rapid, usually over 100, no anæmic bruit is found and there is a hard pulse. 9. Although the illness in this case developed before the usual period, the preponderance of evidence points to this being a case of rheumatic arthritis, as described by Mr. Griffiths and myself.

The importance of this proper differentiation cannot be over-estimated, as upon this treatment entirely hinges—the treatment of rheumatism and rheumatic arthritis by anti-rheumatic medication and non-nitrogenous diet &c.; gout and gouty arthritis by appropriate medicinal treatment, depletion, diet &c.; and, finally, that of rheumatoid arthritis, in which case the strumous element so much predominates[3] that it has now caused quite a revolution in the treatment, approximating it to that of struma or phthisis, by cod-liver oil, tonics, stimulation and building up. It must be clearly and distinctly regarded, not as a result of rheumatism or as a hybrid condition, the diagnosis and nomenclature of which were scamped under the absurd appellation of rheumatic gout, but as a distinct disease possessing strong and peculiar features of its own, an offspring of the hereditary tendencies of gout and scrofula. Of course, from the facts of a single case like this it is impossible to deduce any absolute principles, but I hope it will be a link, though a single link, in the chain of evidence which I have previously brought forward in a large number of cases.

Bath.

[1] Differentiation in Rheumatic Diseases so-called. By Hugh Lane. J. and A. Churchill.

[2] Vide THE LANCET, Dec. 26th, 1891, and following numbers.

[3] Vide Differentiation in Rheumatic Diseases so-called.

THE AXIS-TRACTION FORCEPS.[1]

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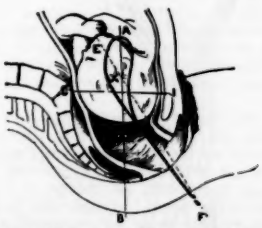
EVERY teacher of midwifery has to make up his mind what kind of forceps to recommend to his pupils when they commence practice. It is all very well for obstetric experts to possess a variety of instruments, and to say that, under such and such circumstances, *this* is the proper instrument to use, and, under other circumstances, *that*. The ordinary practitioner cannot be expected habitually to carry about with him more than one pair of forceps, and that pair obviously should be capable of being used in any case in which delivery by the forceps may be called for. There are of course other conditions besides this of universal applicability that are essential in a good pair of forceps. For example, it should be an instrument easily kept clean and aseptic, and, furthermore, it should in its construction be up to date—that is, it should represent all the more recent improvements, provided they have stood the test of experience and have proved to be real and are not the mere modifications of a faddist. The history of the midwifery forceps is full of interest from the first chapter to the last. The gradual evolution of the instrument from its original crude form to the shape in which it is now familiar to us is a history that always fascinates the student and at the same time teaches him the uses of the various parts of the instrument in a way that nothing else can. In the earlier part of my career as a teacher it

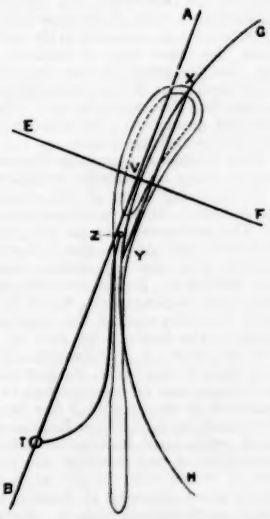
FIG. 1.



Application of curved forceps at brim (Milne Murray). C I, Conjugate diameter. A B, Axis of inlet. E F, Axis of forceps and line of traction. B X F, Angle of error.

was held and taught that in the long forceps with the double curve we had arrived at something very near perfection. That instrument was in use throughout Great Britain. It was generally known in Scotland under the name of Sir James Simpson's forceps, and in the north of England under that of Roberton's; whilst in London and the south it usually bore the name of Robert Barnes. Each of these names indicated slight differences in construction, but in all their main features the three instruments were the same, their geographical distribution being more a question of local patriotism or of loyalty to an individual teacher than of any marked superiority in the particular instrument. For many years, however, there had been a steadily growing conviction in the minds of many obstetricians that the long double-curved forceps was not an altogether satisfactory instrument. The addition of the pelvic curve had ensured the more equable distribution of the grasp of the blades over the fœtal head, and so had removed one of the great objections to the straight forceps, but it had not altered the direction of the tractile force. If the handles of the instrument be carried as far back as the perineum can be stretched, the direction of the traction can never correspond with the axis of the pelvic inlet. This axis, along which the mass of the fœtal head must enter the brim, is coincident with a line drawn between the umbilicus and the coccyx. If traction could be made in this line there would be no misdirection of the force—it would all be available for the purpose aimed at; but exactly in proportion as the line of traction diverges from the axis of the genital canal so some of the force is expended in driving the head of the child against the anterior wall of that canal, and is therefore not simply wasted, but acts to the detriment of the maternal tissues. With the ordinary forceps it is anatomically impossible for traction to be made directly in the pelvic axis, so that a certain amount of the force expended is ineffective. From the year 1860 forwards several attempts were made to remedy this defect by giving a backward or perineal curve to the handles. The most effective device for the purpose, however, was that which we owe to M. Tarnier, of the Paris Maternité, and which he described in the year 1877 under the term of "axis-traction forceps." The essential features of this instrument are the metallic traction rods. These rods, at their upper end, are attached by a hinge-joint to the posterior edges of the blades, and fit, by their lower extremities, into a single curved stem, at the other end of which is a transverse bar, movable in all directions, called the traction handle. When the instrument is in use, the rods lie closely applied against the shanks, while the curve of the stem connecting the rods with the handle carries the handle just sufficiently far backwards to ensure that the direction of the tractile force shall correspond with that of the axis of the pelvic canal.[2] Immediately below the lock and in front of the handles is a fixation screw, by means of which the handles are kept in contact and the amount of compression exercised by the instrument carefully regulated. In using the ordinary double-curved forceps, the operator keeps the handles in apposition by his own grasp, but inasmuch as in all axis-traction forceps traction is exercised solely by means of the traction handle, it is unnecessary, and indeed undesirable, to maintain any hold upon the ordinary handles when once the instrument has been properly introduced and locked. Hence

FIG. 2.



Mechanical projection of axis-traction forceps (Milne Murray).

[1] An address read before the Metropolitan Counties Branch (East London and South Essex District) of the British Medical Association, Nov. 17th, 1892.

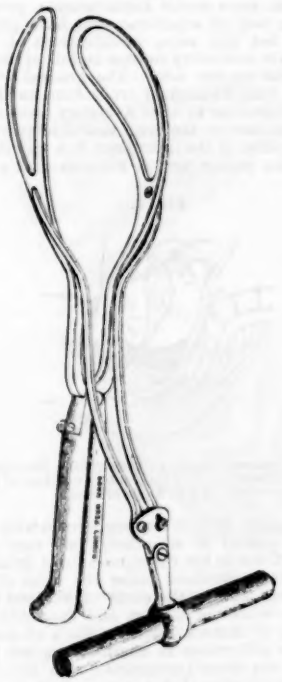
[2] Dr. Milne Murray (Edinburgh Medical Journal, Sept. 1891) has given the following method for testing the accuracy of any given instrument in regard to this curve (see Fig. 2):—"A piece of paper about eighteen inches square should be firmly stretched on a drawing-board or other smooth surface. A pencil line should be drawn down the centre of the paper. Place the left blade of the forceps on the middle of the paper so that the shank coincides with the line already drawn, the hollow side of the blade being upwards. Trace an outline of the blade on the paper, holding the pencil perfectly vertical in doing so. Mark the point at which the shank joins the curve of the blade; call this point Y. Mark the centre of the tip of the blade; call this point X. Join X Y by a straight line. This will form the chord of the arc which forms the middle of the curve of the blade. Bisect X Y by a line at right angles to it, E F. Describe a circle, G X V Y H, whose centre lies on E F, and whose circumference touches X and Y. The arc X V Y lies in the middle of the blade. Now draw a tangent, A B, to the circle X V Y, at the point V. This will be parallel to the chord X Y. Now lay the blade on the paper in its original position, taking care that the points X and Y correspond precisely with their position on the forceps. If the traction rods Z T are properly constructed, *the stud T will lie on the line* A B, *when the rod lies close to the shank*."

arises the necessity for the fixation screw just described. Without some such contrivance the handles would fall asunder and the instrument become completely disarranged. The advantages claimed for this instrument are as follows:—1. The traction rods, permitting traction to be made in the axis of the inlet, ensure that all the force expended by the operator is exerted usefully, and that the maternal tissues are exposed to no unnecessary pressure. 2. The application handles move forwards as the head descends in such a way as to furnish a constant guide to the direction in which traction should be made in order that it may be exercised with most effect—i.e., the direction proper to the plane of the pelvis through which the head is passing. 3. The transverse handle enables the operator to keep up a steady and continuous pull with a minimum of muscular fatigue, and therefore with the power of estimating with some approach to accuracy the amount of force he is expending. The first of these advantages Tarnier's instrument shares with Hubert's, Aveling's and some others of its predecessors. The second and third it does not; they are peculiar to itself. The objections which have been raised against Tarnier's forceps are that it is costly, unwieldy and complicated. These objections are no doubt well founded, but they are not altogether insuperable. The design of the instrument did not issue from the brain of its originator in a state of irreproachable perfection. Its details, as must always be expected in the earlier attempts to carry out a new idea, were open to criticism and capable of improvement. But its principle has stood its ground in spite of all the criticism that it has encountered; and that, after all, is the main fact that concerns us. The advantages are unmistakable and permanent; the disadvantages are for the most part accidental and removable.

As early as 1880 Professor Alexander Simpson of Edinburgh introduced a series of valuable modifications which had the effect of removing many of the objections urged against the instrument. These modifications are mainly as follows: 1. The instrument is an adaptation of the principle of Tarnier's forceps to the ordinary forceps in use in this country, and hence is much less bulky and complicated than Tarnier's. 2. The traction apparatus, including the handle and locking plate, which in the French model is detached from the rest of the instrument, is permanently attached to the blades; no part of it therefore can be mislaid or forgotten. 3. The fixation screw is greatly reduced in size, in order to emphasise the fact that the screw is not to be used for purposes of compression, but of adjustment. The instrument as thus modified has become widely popular in Scotland and amongst those English practitioners who received their professional training in Edinburgh. In the south the principle of axis traction has never been so heartily accepted or so generally taught as it has been in the north, and the great majority of English practitioners are still practically unacquainted with it. Even those who were present when Tarnier's instrument was first exhibited in this country, and to whom it therefore cannot be said to be entirely unknown, were for the most part so repelled by its bulk and complexity that they took no further interest in it. The merit of Professor Simpson's modification was that without sacrificing any important principle in its construction it in great measure got rid of those features. Other modifications have been proposed in abundance. A large number of them consist of loose traction rods, more or less resembling boot-hooks, which are to be hooked into the lower angle of the fenestræ or other convenient place, and traction made backwards. It need scarcely be said that such an arrangement, whether in itself advantageous or not, is not axis traction. It may be possible by its means to make traction in the axis of the inlet, but the guidance afforded by the application handles in Tarnier's instrument is forfeited, and no guarantee is provided that the direction of the tractile force shall alter as labour advances, and shall be at all times suitable to the part of the pelvis through which the head is passing.

It will have been inferred from what I have already said that I believe the axis-traction forceps to constitute the most important improvement that has been made in the construction of the instrument since the introduction of the pelvic curve. No one who has used it sufficiently often to overcome the slight difficulty at first experienced in its manipulation will ever willingly return to the older form. It can not only accomplish all that the older instrument can accomplish, and do it more easily, but it can accomplish more—for it will not infrequently succeed where the latter has failed. I am myself firmly convinced that the general adoption of the principle, at least, of axis traction, the truth of which is capable of mathematical proof, is merely a question of time. It was in the form of Professor Simpson's modification of Tarnier's forceps that I first became practically acquainted with the instrument. It will therefore be readily understood that, as a mere matter of sentiment, I have been loth to suggest any alteration in the Edinburgh model. When, however, in the year 1889 Messrs. Down Brothers informed me that they were about to make some axis-traction forceps in order to meet the demand consequent upon my recommendation of them, and asked me which pattern I should recommend them to adopt, it seemed a suitable opportunity for proposing some slight modifications in Professor Simpson's instrument that experience had convinced me would still further increase its value. These proposals they at once proceeded to carry into effect, the result being the instrument shown in Fig. 3. It differs from Professor Simpson's chiefly in being generally firmer and more unyielding, in being furnished with stronger screws and a stronger stud on the traction plate, and in its being made entirely of metal. The object of these alterations is to provide

FIG. 3.



Modified axis-traction forceps.

an instrument that will not bend; that, being made specially strong in its weakest parts, will not be likely to fail at the supreme moment by the giving way of those parts; and that, by having no woodwork about it, can be rendered thoroughly aseptic by boiling. The total length of the instrument is 14½ in. The handles are 5½ in. long, the shanks 2½ in., and the blades, measured along the chord of the arc, 6½ in. The shanks are very strong and are ¾ in. apart. The greatest width between the blades is from 3 in. to 3¼ in., and the distance between their extremities (when the instrument is locked and the application handles in contact) is ¾ in. Each blade has a maximum breadth of 2 1/16 in., and a fenestra 4¼ in. long by 1½ in. wide. The traction rods are screwed on to the solid part of the blade, immediately below the fenestræ, so as to allow of antero-posterior movement only. A key is sent with each instrument for unfastening these screws for cleaning purposes. The fixation screw is the same as in Professor Simpson's instrument, but is somewhat stronger. The design of the locking plate and the traction handle is also the same, but again the screws and knobs are of stronger construction.

I have purposely delayed publishing any description of it until its practical value has been repeatedly tested. It has now been used a good many times both at the General Lying-in Hospital and in the maternity department at St. Thomas's Hospital, and has been found to be a highly efficient instrument. The delay has enabled me to suggest an important alteration of the original model. The blades were unnecessarily wide apart between the fenestræ and the shanks, causing premature distension of the perineum as the head descended. That defect has been removed. The instrument is, I am aware, heavier than is desirable, but this fault appears to me to be more than counterbalanced by the ease with which, being constructed entirely of metal, it can be efficiently disinfected. It has been a matter of considerable interest and gratification to me to observe that Dr. Milne Murray of Edinburgh, approaching the subject from a more theoretical standpoint, has quite independently suggested a modification of Professor Simpson's instrument that in many respects resembles the one here described. I am sure Dr. Murray will believe me when I say that I had not seen his paper at the time my own suggestions were being worked out.

It may be useful, in conclusion, to give a few plain directions for applying the axis traction forceps. 1. Introduce first the left blade, to which the traction bar is attached. 2. Before introducing the right blade see that its traction rod is swung forwards, otherwise there will be difficulty in locking the instrument. 3. When the blades have been locked, swing back the traction rod of the right blade and hook it on to the traction plate. 4. Holding the instrument by the application handles, estimate the degree of compression that is desirable and tighten the fixation screw so as to keep up the compression at that point. 5. After this has been done leave the application handle untouched. 6. Make traction with the traction handle, keeping the traction rods parallel with the shanks. 7. Complete the delivery of the head before removing the forceps. This gives the operator greater command over the head, enabling him to prevent its too rapid expulsion and to make traction when there is least strain. 8. As soon as the head is born, loosen the screw, set free the right traction rod and remove the blades, first the right and then the left.

I have to acknowledge the great help I have derived in the preparation of this short address from the admirable monographs on the subject contributed to the *Edinburgh Medical and Surgical Journal* by Professor A. R. Simpson[3] and by Dr. Milne Murray,[4] to which, as well as to Tarnier's original account of his instrument, I must refer those who may desire fuller information as to its theory and scope. Dr. Murray's masterly exposition of the mechanical principles involved in the cons-traction of the axistraction forceps gives to his paper a special and altogether unique value.

TWO CASES OF NON-SUPPURATIVE TRAUMATIC PERITONITIS IN CHILDREN.

BY G. A. SUTHERLAND, M.B. EDIN., M.R.C.P. LOND.,
PHYSICIAN TO THE NORTH LONDON CONSUMPTION HOSPITAL; REGISTRAR TO THE PADDINGTON-GREEN CHILDREN'S HOSPITAL.

IN a recent number of THE LANCET[1] Mr. Edmund Owen has recorded a case of traumatic peritonitis for which he performed laparotomy, with almost immediate cessation of the acute symptoms and complete recovery in a few weeks. From the nature of the original injury and the subsequent symptoms Mr. Owen expected to find pus and some visceral lesion in the abdominal cavity, but instead he only discovered a large accumulation of blood-stained serum and clots, with signs of peritonitis. Such cases are but rarely met with, and the following notes may be of interest as the results of treatment confirm the opinion expressed by Mr. Owen. The patients were in the Paddington Green Children's Hospital under the care of Mr. Watson Cheyne, to whom I am indebted for permission to record the cases.

CASE 1.—A child twelve months old was admitted to hospital on Nov. 19th, 1889. Four weeks previously Mr. Cheyne had tapped a congenital hydrocele of the right side. The mother had not noticed anything wrong with the child, apart from the reappearance of the hydrocele, until four days before admission, when she discovered that the abdomen was swollen. During the last few days there had been occasional sickness. The patient was a well-nourished infant, but distinctly anæmic. On admission the temperature was 101° and the pulse 146. There was no sickness and no evidence of pain. A large hydrocele was present on the right side, the contents of which could be easily returned to the abdominal cavity. The abdomen was very distended, tense and tender to the touch; on the right side there was absolute dulness extending from the spine posteriorly to within a finger's breadth of the middle line anteriorly, and from the ribs above to within a short distance of the pubes, and fluctuation was distinct over this area. The left side of the abdomen appeared to be normal, and the liver and spleen were not enlarged. On the sixth day after admission the temperature had risen to 103°, while the child was more anæmic and seemed in great pain, moaning incessantly. Mr. Watson Cheyne tapped the hydrocele with a trocar and cannula and drew off four ounces of blood-stained serum, and as this did not reduce the swelling higher up, he proceeded to tap the abdomen in the middle of the dull area and drew off six ounces and a half of a similar fluid. No improvement followed. The abdominal swelling was not removed, the hydrocele quickly refilled, the anæmia increased, and the temperature rose to 104°. Accordingly two days later Mr. Watson Cheyne opened the abdomen in the middle of the right linea semilunaris and evacuated a large quantity of blood-stained fluid. On introducing his finger he felt a soft fluctuating mass in the right iliac fossa, the wall of which gave way, and another rush of similar fluid took place, accompanied by the disappearance of the scrotal swelling. The septum thus ruptured was extremely thin, and seemed to be of fibrinous structure. The finger passed easily from the peritoneal cavity into the right tunica vaginalis. The fluid removed contained no clots, but coagulation took place to some extent in a specimen put aside. The small intestine presented at the abdominal wound, and, with the exception of slight congestion, seemed healthy. The wound was then closed, a small drainage-tube being left at the upper end. Next day the temperature was normal and the patient was free from pain. There was very little discharge from the wound, and the tube was removed on the third day. The child made a good recovery and was discharged cured at the beginning of January, there being still a certain amount of resistance to be felt on palpation over the right side of the abdomen. This was probably due to thickened peritoneum and had entirely disappeared when the child was seen a year later. There had been no return of abdominal trouble and the child was in good health.

CASE 2.—A girl aged eight years was admitted to hospital on Aug. 8th, 1888, having been knocked down and run over by a cab. The wheel was said to have passed over the abdomen. The patient was suffering from shock, being quite blanched and almost pulseless. There was considerable bruising about the face, but no fracture anywhere. She complained of great pain in the back and in the epigastrium, and lay in bed with her thighs flexed on the abdomen. On the following day the abdomen was distended and tender in the epigastric region. She suffered greatly from thirst, and was sick after taking food. The breathing was entirely thoracic, the muscles of the abdomen being kept rigid. Three weeks later the pain and sickness had ceased, but the temperature at night ranged between 100° and 101°. In the epigastric region a distinct swelling could be seen and felt, extending downwards from the ensiform cartilage to within an inch of the umbilicus and passing beyond the edge of the rectus muscle on each side. As counter-irritation had no effect on this swelling, which increased in size, and fluctuation could be made out, it was aspirated a fortnight later, and ten ounces of dark-green fluid were removed. The fluid contained a large amount of albumen and red blood corpuscles. The temperature the same evening was lower than it had been for some nights, and became normal two days later. She was discharged well in three weeks, but there still remained some thickening in the epigastric region.

The course of these cases was clearly distinct from that seen in peritonitis, due to the rupture of some abdominal viscus. In the latter suppuration is soon present, and the whole course of the illness, which usually terminates fatally in a few days, is acute. In the former, and also in Mr. Owen's case, the course was more chronic, the symptoms were those of progressive disease, and suppuration was not present. The

[3] Sept. and Oct. 1880, and Oct. 1883. [4] Aug. and Sept. 1891.
[1] Oct. 22nd, 1892, p. 936.

rapid improvement noted in all cases after evacuation of the blood and serum supports Mr. Owen's view that this is due to the relief of tension; but, on the other hand, much greater tension is often present in the abdominal cavity without causing any discomfort. The employment of a trocar and cannula, or, better still, of an aspirator, may sometimes be sufficient, as in Case 2; but in Mr. Owen's case the presence of blood-clot and in Case 1 the presence of a septum rendered laparotomy necessary for complete success. In the above cases the progressive anæmia was a marked symptom, and suggested that the effusion of blood continued for some time after the original injury. In Case 1—which presumably in the absence of any history of other lesion was due to the tapping of the hydrocele—the amount of blood found seemed out of all proportion to the extent of the injury.

Carlton-hill, N.W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se compare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

INGUINAL ANEURYSM TREATED BY LIGATURE OF THE EXTERNAL ILIAC ARTERY BY THE INTRA-PERITONEAL METHOD.

(Under the care of Mr. MAKINS.)

CASES in which it is necessary to ligature one of the iliac arteries for aneurysm are very rarely met with in surgical practice, and the fact that the ligature was applied in this instance through the peritoneum makes this account of especial interest. There are few instances on record where a ligature has been applied to the external iliac by the method described below, and it is worthy of remark that on the same day that Mr. Makins performed his operation Mr. Mitchell Banks operated on a similar case at the Liverpool Royal Infirmary, also with success. His patient, aged sixty-three, was of spare frame; the aneurysm was situated on the right side, was as large as a fist and of some weeks' duration. Catgut was used to ligature the vessel, and the coats were not divided. The patient left the hospital on the forty-first day after the operation. Mr. Makins draws attention in his remarks to the anatomical difficulties which may be met with, and also directs attention to the possibility of greater risk of hernia after this method. Mr. W. H. Brown, who appears to have also performed the ligation of this vessel through the peritoneum, found it very difficult to reach; but details of the case are wanting. We hope that the publication of this case will lead to the record of others, for the intra-peritoneal method (or, as we prefer to call it, the "transperitoneal") will doubtless be favoured by operators in the future. The records of ligation of the common iliac artery are more numerous than those of the artery which we are considering; but we only wish to direct attention to the latter, though it is quite possible that the operations on the common iliac of Dennis in America and of Rivington and Lucas in this country have led to the fuller consideration of this subject.

The patient was a carpenter aged thirty. Family history good; father, three brothers and two sisters alive and in good health. Mother died at fifty-four; cause of death unknown. He has, on the whole, enjoyed good health, except an uncomplicated attack of acute rheumatism three years and a half ago, gonorrhœa in youth and four years ago he acquired syphilis, which does not seem to have been thoroughly treated. At present there are no evidences of tertiary syphilis beyond the presence of the aneurysm. His occupation at times gives him heavy work and exposes him to the liability of strain.

Sept. 16th, 1892.—For the past twelve months he has noticed that when he slept on his left side he awoke in a cold perspiration and experienced considerable pain in the left groin and neighbourhood. Four months ago he thinks he strained himself lifting a heavy wardrobe. Three months ago he noted pain and pulsation in the groin, and during the past six weeks swelling and pain down the front of the thigh to the knee. No pain referred to the testicle. These symptoms have been gradually becoming more severe, and on Sept. 15th he was sent to the hospital by Mr. Winterburn.

On admission the patient was a stoutish man of ruddy complexion, due to dilated capillaries and considerable development of subcutaneous fat. The limb was much swollen and œdematous. In the left groin there was a large oval pulsating tumour in the course of the external iliac and common femoral arteries. It extended upwards about two-fifths of the distance between the middle of Poupart's ligament and the umbilicus and for about two inches below the ligament; it was about two inches in breadth. The tumour was hard, the pulsation expansile and synchronous with the heart beat; there was a rough double bruit. Pulsation in the posterior tibial artery was weaker than on the sound side. The area of cardiac dulness was not increased, the first sound was somewhat indistinct at the apex, and the second sound accentuated over the aortic area, but there was no distinct murmur. Pulse 70–80, rather irritable; there was no marked evidence of general arterial disease; no evidence of any other visceral disease; urine, sp. gr. 1018, clear, no albumen, deposit of phosphates; bowels regular; temperature 98·8°. He remained quiet in bed during the next four days, during which time the pulse subsided and the heart's sounds and action became normal.

On Sept. 20th, the patient being under the influence of an anæsthetic of mixed chloroform and ether, an incision four inches in length, commencing one inch below the level of the umbilicus, was made in the left linea semilunaris. The incision was carried through the abdominal wall into the peritoneal cavity and was slightly enlarged downwards, and the deep epigastric artery, which originated in the tumour, doubly ligatured and divided. The small intestines were held over to the right with Messrs. Ballance and Edmunds' broad abdominal retractor, the sigmoid flexure was pushed upwards and an incision was made through the lower part of its mesentery and the peritoneum at the margin of the pelvis in the course of the artery. The wound was deep, there being about an inch and a half of subcutaneous fat and abundance of fat in the subperitoneal tissue both beneath the anterior abdominal wall and around the vessels. This, together with some retching on the part of the patient, rendered the freeing of the artery and the passage of the ligature a process of some difficulty. The spermatic vessels also were exposed and swelled up considerably in the wound. The artery was secured about three-quarters of an inch below the bifurcation of the common iliac and an inch and a half above the aneurysmal sac, and lay somewhat deeply at the inner margin of the psoas muscle; two threads of stout flossy sterilised silk were tied separately, but in close apposition, with sufficient firmness to rupture the internal and middle coats. The posterior peritoneum was sutured over the artery, and the abdominal wound closed with silkworm gut sutures. Bicyanide dressings were then applied and a flannel roller. Pulsation in the aneurysm ceased entirely with the application of the ligatures.

The after progress of the case was in all respects satisfactory; the patient complained of some pain in the limb for the first few days, and the front of the thigh was markedly cold in contrast with the buttock. The circulation in the foot was throughout satisfactory, quick return of blood being noted after pressure upon the toe-nail on the second day. The general bodily temperature rose to 99·4° on the first two evenings, and afterwards remained uninterruptedly normal. There was never any abdominal pain, tenderness or distension.

On the seventh day pulsation was palpable in the anterior tibial artery. The bowels were opened by an enema, the wound was dressed for the first time, and the stitches removed, as it was found completely united. A week later the patient complained of some discomfort, and on examination it was found that the subcutaneous section of the wound had gaped in its central part, windowed strapping was applied, and in ten days complete union again took place. On the twenty-fourth day an abdominal belt was fitted to support the cicatrix, and on the thirtieth day he was allowed to sit up in a wheel chair. The aneurysm remained hard and firm, with no trace of pulsation throughout, and gradually diminished in size. On the forty-fourth day he was allowed to walk, and on the forty-seventh he left the hospital. The aneurysm now occupied about two-thirds the area it did before

treatment; it was hard and painless. The limb was warm, the tibial arteries both palpably pulsating, and except for slight numbness in the foot he felt well. Three weeks later he was still improving.

Remarks by Mr. MAKINS.—The reason for selection of the intra-peritoneal method in this case was the high position of the aneurysm. Before operation the pulsation in the iliac fossa was so forcible and extensive that it seemed probable that it might prove necessary to ligature the common iliac, and it was thought that this would be more readily performed by the intra-peritoneal method. Beyond this the intra-peritoneal method seemed to offer the great advantage of not in the least interfering with the coverings of the sac, which by the ordinary method might have been disturbed by the stripping of the peritoneum. The experience gained by the operation showed that the usual method might have been safely adopted, but this could not be definitely determined beforehand. An advantage was gained in ready access to the deep epigastric artery, which, as directly feeding the sac itself, needed ligature, but of course might readily have been secured by an extension of the ordinary wound. As to the comparative difficulty of the two operations, I think there is little to choose, and on the whole the incision for the extra-peritoneal method is perhaps to be preferred in the matter of cicatrix; in the vertical incision the advantage of suturing the fibrous structures in the linea semilunaris is gained; but, on the other hand, the resulting cicatrix passes directly through from skin to peritoneum. In the oblique incision the decussation of the various muscular layers leads to a certain intricacy and irregularity in the line of the cicatrix which may render it the stronger, since pressure is less readily brought to bear directly upon it. The choice of the iliac vessels obtained is, I think, a real advantage, since the incision needs neither extension nor modification; but in saying this it should be pointed out that this is a much stronger argument on the right than on the left side of the body. Ligature of the right common iliac artery by the intra-peritoneal method is probably the easiest of all the operations on the great arteries, since the vessel lies directly beneath the peritoneum of the posterior abdominal wall uncovered by any structures of importance. On the left side, on the other hand, the inferior mesenteric vessels as they enter the sigmoid mesocolon and pass down to the meso-rectum cover practically the whole of the artery, and to reach the common iliac comfortably and safely the peritoneum would need to be divided close to the left of the median line of the sacrum and then displaced outwards. This manœuvre has the disadvantage of exposing the vein freely, but this would probably give far less trouble than the numerous mesenteric vessels would when swollen by reason of the loss of their peritoneal support. In the case recorded above the distension of the spermatic vessels when set free by the division of the peritoneum was much greater than would have been expected.

ANCOATS HOSPITAL, MANCHESTER.

THREE CASES OF COMPOUND DEPRESSED FRACTURE OF THE SKULL TREATED BY ELEVATION AND REIMPLANTATION OF FRAGMENTS, AND WITHOUT THE USE OF THE DRAINAGE-TUBE.[1]

(Under the care of Dr. P. TYTLER.)

THE treatment of compound depressed fractures of the skull has of late received considerable attention in our columns,[2] and we would only direct our readers to some of the more important points which bear out our former statements with regard to such cases. These are the reimplantation of bone, whether removed with the trephine or broken by the violence of the injury, and the closure of the wound without drainage. In these three cases the treatment was similar, the wounds were made thoroughly aseptic, perchloride of mercury was the antiseptic used, and fragments were replaced. Under these circumstances it is interesting to note that the only patient who had any necrosis of replaced fragments was the one aged thirty-eight, in whom the bone was hardest and least vascular. The youth of the patients and the healthy state of the bone have been the conditions most evident in the cases where full success has been attained, like Cases 1 and 3.

[1] The cases were shown to the members of the Clinical Society, Manchester.

[2] THE LANCET, vol. i. 1892, p. 1186. Ibid., vol. ii., p. 992.

CASE 1.—A boy aged six years was on May 5th, 1892, admitted with a compound depressed fracture on the right side of the skull, immediately above the ear, caused by a blow from a swing-boat. The patient had suffered from symptoms of shock when first admitted, but these had disappeared when Dr. Tytler saw him about three hours after the accident. The wound was washed with antiseptic lotion and the scalp was shaved for three inches round, and then thoroughly cleansed. After the patient was under chloroform the wound in the scalp was found to be at the posterior end of a marked depression of bone. The wound was enlarged upwards by a vertical incision for about an inch; this incision was then extended forwards and downwards in a semilunar form to half an inch below the level of the fracture, passing in front of its anterior end. The flap thus outlined was reflected, displaying a gutter-like depression about an inch and a half long, formed by two long narrow fragments of bone bent in towards each other, gradually sloping and deepening towards the posterior end, where the groove was abruptly terminated by one large and several minute pieces turned nearly vertically inwards. The depression would be about three-quarters of an inch deep at its posterior end, and rose gradually to the surface at its anterior extremity. The pieces of bone were firmly wedged together, and left no opening for the elevator or sequestrum forceps. By means of a sharp chisel a notch was gently made in the sound bone at the upper aspect, so as to allow force to be brought against the upper fragment. On introducing the elevator it was easily dislodged, and the other pieces were then carefully removed without much difficulty. (All the fragments were on removal immersed in warm perchloride lotion.) After removing the end-pieces a small hole was found in the dura mater at the posterior end of the opening, where the end-pieces had been turned in vertically. There was a flow of blood and cerebro-spinal fluid from the opening. (Mr. Williamson, the house surgeon, had reported the discharge of cerebral fluid from the wound on the patient's admission.) After some small blood-clots were removed cerebral pulsation appeared. The whole field of operation was then deluged with warm perchloride lotion and cleared of all clots and débris, after which there was no bleeding which required attention. The largest fragment of bone was then placed on the dura mater and two or three small chips to fill up the vacant corners. As much periosteum was spread over the pieces as could be got. After removing the artery forceps, no vessel requiring ligature, the scalp was replaced and secured with silver sutures, applied chiefly at the points where the artery forceps had been. No drainage-tube was employed, but the wound opposite the fracture was left unsutured for an inch, so that any effusion could easily make its way out. Iodoform was then sprinkled thickly over the external wound, after that iodoform gauze and then a wood wool pad. These were secured by a gauze bandage and several long strips of strongly adhesive plaster applied as a bandage over all. The patient was then put to bed and kept on low diet for a fortnight. Happily for the patient the wound has no further history except the removal of the dressing four weeks later, when sound healing was found all round; the sutures were *in situ*, as harmless as earrings, without a trace of inflammation or ulceration. The patient was discharged well on June 6th.

CASE 2.—A woman aged thirty-eight was admitted on May 6th, 1892. She had sixteen wounds on the head, inflicted with an axe, varying in severity from superficial abrasions to gashes several inches long reaching down to the dura mater. The patient having rallied from the shock and hæmorrhage, the scalp was shaved and washed with 1 in 40 carbolic lotion. Under chloroform the following compound fractures were made out: (1) the front portion of the right parietal bone had been cut through with the axe down to the dura mater; (2) another fracture of the same kind was found in the posterior portion of the parietal; (3) another of the same kind, but not quite through the bone, appeared in the upper part of the occipital bone; (4) a fissure in the left parietal running parallel to and about an inch from the sagittal suture. The scalp was thoroughly washed with perchloride lotion. A flap was reflected from the middle line, passing through the two wounds anterior and posterior so as to completely expose the gashes in the parietal bone. The fracture in the anterior part extended to the dura mater and a fissure passed upwards from it to the sagittal suture. Fearing that the inner plate might be splintered or inverted in spicules a portion of bone, after reflecting off the periosteum,

was removed by the trephine along the posterior edge and the cut in the bone thoroughly examined. Hairs were found embedded in the wound and a large clot of blood between the dura mater and the skull. There was no inversion of the inner plate and no splintering, except the fissure already mentioned, as proceeding to the sagittal suture. With a cutting chisel the edge of the gash was planed and cleared of all loosened and contused particles and all foreign matter, and the clot carefully washed out from the bottom of the wound. The fissure was left alone. The gash on the posterior aspect of the parietal was also explored. After trephining, as, in the first case, it was found to be less severe than the one in front, there being no fissure and no clot between the dura mater and the bone. The edges here were also planed and cleared of all débris and foreign matter. The gash in the occipital bone did not penetrate to the dura mater, and, considering the tough, non-brittle character of the bone, as shown by the trephining in the parietal, the edges were simply planed and cleared of all débris. The wound was carefully washed and then sutured; the other flesh wounds were washed and treated. The pieces of bone removed by the trephine, which had been kept in warm antiseptic lotion, were replaced and the periosteum carefully spread over them; the parietal flap was put in position and secured by four or five sutures just to secure coaptation, and loose enough to allow exit for oozing if it occurred in excess. After emptying much perchloride lotion through below the flap and over all the external wounds, iodoform was freely sprinkled over the wounds; then strips of iodoform gauze and then absorbent wool pads all over the scalp, which were firmly secured by bandages and strapping. The patient was put to bed and did well until the tenth day, when she complained of headache, and her temperature rose to 101°. Dr. Tytler was sent for. He removed the dressings and found all the wounds healed by first intention, but there was tenderness near the site of the wound on the posterior part of the parietal. Here the skin of the scalp had been much contused, and though it had been soaked with antiseptics it was feared it had not been rendered aseptic. It would have been better to have pared the lacerated edges. The wound was reopened near the painful spot and a little pus let out, and after lightly syringing the wound a small drainage-tube was inserted. Next day the temperature was normal and continued so. A sinus remained discharging pus. On probing this sinus bare bone could be felt. In this condition the patient left the hospital on June 1st, but to attend as an out-patient to have the wound dressed. Dr. Tytler was waiting for the sequestrum to separate. On Aug. 6th, there being no signs of healing, the patient was readmitted and had the sinus laid open. It was then found that the posterior reimplanted circle of bone was loose, so it was removed and the sinus healed forthwith. The patient has remained well since.

CASE 3.—This case was like the first. The patient, aged eleven years, was admitted on July 11th, 1892, with a compound depressed fracture in the middle of the right side of the frontal bone caused by a blow from a swing-boat. Proceeding as in the first case, a flap was raised and the fracture exposed. A rounded piece of bone about the size of a sixpence had been driven directly inwards so that it lay at the bottom of a pit about three-quarters of an inch deep. Reflecting the periosteum a V-shaped notch was cut in the upper part of the opening with the bone forceps and the bevelled edges were clipped away with the same instrument, for it was found that a larger surface of the inner plate than of the outer had been broken off. Introducing a small forceps at the notch the fragment was seized and removed and put in warm lotion. There was no wound in the dura mater, though it had been considerably depressed by the fragment. After removal the depression was quickly obliterated by a swelling up of the whole surface till it reached the level of the inner plate, but there was no pulsation of the brain to be seen or felt. There was evidently a large meningeal hæmorrhage. There were no symptoms of compression either before or after. The bone was replaced and the wound dressed as in the former cases. The patient was put to bed and did well. The dressing was removed about eight weeks afterwards, and it was found that the wound had healed everywhere. The patient was discharged on Aug. 11th, 1892.

Remarks by Dr. TYTLER.—A great deal of the success in these cases was due to the prompt manner in which the wounds were rendered aseptic immediately on admission of the patients by the house surgeons, Messrs. Worboise, Bentley and Williamson. There was no drainage-tube used, and the wounds were left unsutured at certain places to allow of drainage if it should be required. Paring the contused wound is, I think, excellent, and if freely pared it would provide an easy channel for drainage if not too tightly sutured.

TORBAY HOSPITAL, TORQUAY.

A CASE OF IMPACTED CALCULUS BEHIND A STRICTURE OF THE URETHRA; RETENTION AND EXTRAVASATION OF URINE; OPERATION; RECOVERY.

(Under the care of Mr. F. T. THISTLE.)

THE complication of calculus of the bladder with a stricture of the urethra is occasionally met with, and the dilatation of the urethra found behind a chronic stricture facilitates the passage of a small stone into the pouch thus formed. After it has gained entrance into this dilated part the occurrence of ulceration and its escape through the opening into the tissues outside are to be expected. How long one or more of the stones in this case had been in the cavity below the urethra it is not possible to say, but instances are on record of their formation in such pouches. Erichsen points out that although mostly renal in origin they may be formed in the urethra, but in other instances appear to have been formed in a pouch lying to the outside of the passage and connected with it by a small aperture. He removed a stone consisting of triple phosphates and weighing an ounce from a point between the urethra and the symphysis pubis; the patient suffered from a tight stricture. As the evidence showing the point of origin is chiefly derived from a chemical analysis of the calculus, it would be interesting to have a report from Mr. Thistle of the composition of the other calculi removed. For the notes of this case we are indebted to Mr. A. E. Watson, house surgeon.

A man aged thirty-two was admitted into the hospital on the morning of Aug. 29th, complaining of pain and swelling in the perineum and inability to pass his urine. He was a short, dark-haired man, fairly developed, but with an anxious expression and somewhat sallow complexion. He stated that he had gonorrhœa in 1877, and in 1889 an operation for stricture was performed at St. George's Hospital. He passed a No. 5 catheter after this until six weeks ago, but was then unable to get one in. For the last three months he has suffered from a sharp cutting pain at the "neck of the bladder," worse on passing urine, and sometimes the stream suddenly stopped. He was unable to pass urine two days before admission, and on the day before (28th) his perineum became swollen and painful.

On examination an elongated, brawny swelling was seen and felt in the middle line of the perineum, and about the centre of the swelling fluctuation could be made out. There was marked tenderness, but no redness of skin. The scrotum and penis were much swollen; no urine had been passed since the day before admission, when a little dribbled away; a catheter could not be passed. The patient was put under an anæsthetic in the afternoon and a longitudinal incision was made in the middle line of the perineum over the fluctuating portion of the swelling; a stream of urine, mixed with pus, gushed out. On introducing the index finger into the wound a hard, smooth stone could be felt (this weighed ninety-one grains, and was a smooth uric-acid stone), which was withdrawn with small forceps, and on reintroducing the finger two more stones could be felt lying in a pouch, formed partly by the dilated urethra and partly by an abscess cavity. The pouch was very large, and extended into the perineum and backwards behind the neck of the bladder. It contained, besides the stones, pus and urine and several sloughs, and its walls were rough and sloughy. The second stone extracted resembled the first, and weighed 124 grains; the third was oval, weighed 425 grains, and was found at the back of the pouch behind the neck of the bladder. It had to be extracted with lithotomy forceps. A sound was then guided into the bladder, but no more stones could be found. Free incisions were made into the scrotum, penis and sides of the perineum, and a large quantity of decomposing urine was let out. A tube was introduced through the perineal wound into the bladder and another in the perineal pouch. A dressing of blue wool, absorbent wool and tenax was then applied, and the penis and scrotum were frequently fomented with warm iodoform. A morphia suppository (1½ gr.) was ordered. The patient's general condition was very bad for two days after this, but on Sept. 2nd the following note was made: Patient much better this morning; slept well. Pulse 100; stronger and fuller. Takes nourishment well. The perineal wound is looking

well, suppurating freely; the pouch is filling up. He passes urine freely through the perineal wound. The incisions in the scrotum and penis are healing rapidly. Temperature normal. On Sept. 24th a No. 1 silver catheter was passed through the stricture after some difficulty, the patient being under an anæsthetic. The catheter was guided into the bladder (by the finger introduced through the perineal wound) and tied in. The stricture was gradually dilated, and on Oct. 22nd the edges of the perineal wound were pared and stitched with silver wire. The surrounding tissues were so indurated that the wound would not unite. The patient is now in very good health, he passes urine through the perineal wound three or four times daily, and has little or no trouble from his urine dribbling through the wound.

Remarks by Mr. THISTLE.—The case is an unusual one, and the impaction of a stone behind a stricture is seldom a cause of extravasation of urine. The perineal pouch was most probably formed by the dilated urethra behind the stricture and the walls of an abscess. The third calculus was found at the back part of this pouch and behind the neck of the bladder. With regard to the stricture, it was situated about the bulbous portion of the urethra, and although no catheter could be passed when the patient was admitted, one was passed some weeks after, when the parts had been kept at rest and all element of spasm had disappeared. The wounds in the scrotum, penis and perineum healed very rapidly, although the tissues had been saturated with putrid urine.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Cholera.

AN ordinary meeting of this Society was held on Dec. 5th, the President, Mr. Hutchinson, being in the chair.

Surgeon-Colonel J. B. HAMILTON read a paper on Cholera, its Epidemic Progression and Causation. He explained the number of conflicting theories of the causation and spread of cholera by each observer reasoning on the facts that had come to his personal knowledge. The statistician surveyed the various outbreaks from his office and mapped out the progress of the disease. He alluded to the curious want of unanimity in the writings of Indian authors which had discredited Indian opinion on this subject. The object of the paper was to show that no theory hitherto propounded covered the ground of epidemic cholera, the explanation in every case falling short in some material particular. There were three principal theories: (1) propagation by drinking water, food &c.; (2) human intercourse; and (3) conveyance of the disease by the air, to which might now be added the so-called vibrio or cholera bacillus. He assumed that the identity of the disease as met with in Asia and Europe respectively was now established and he thought that its progression also took place on much the same lines. Here as there it followed certain well-defined lines, was more virulent at the commencement than at the close of an epidemic (thus accounting for the successes claimed for so-called specifics) and it did not retrograde or work backwards. Admitting the contaminated water theory for the sake of argument, he raised the question as to the value of filtration, expressing grave doubts as to the efficacy of any system of water filtration as carried out by the water companies. He called attention to a paper by the State geologist for New Jersey on the plan of precipitating the organic matter of water by the addition of two grains and a half of alum to the gallon and subsequent filtration. He asserted, on the authority of an eminent bacteriologist, that cholera had never been proved to be one of the diseases conveyed by bacilli. Koch believed that the disease was conveyed by the bacillus, but many other authorities, after mature consideration, had come to a directly opposite conclusion, and he referred to some of the examples mentioned by the dissenters in support of their view. He denied that the diminution of cholera in Calcutta that had followed the introduction of a supply of pure water was due directly to the purity of the water. The effect of a pure water-supply on the general health would account for a large share of the diminution apart from the absence of specific contamination. The case of Fort William, where the mortality fell from 20 per 1000 to 1 per 1000 on the introduction of a better water-supply, could not be accepted as certain proof that the improvement was entirely due to the better water-supply, because at the same time general sanitation was also much improved, notably by the erection of spacious barracks and the use of earth closets. He referred to the outbreak of cholera in the great Alipore gaol which followed the introduction of the pipe water, and he claimed that it was as fair to put this to the account of the water as it was to attribute all improvements in the mortality returns to that cause. He traced the course of epidemic cholera in India, showing how the heavy rainfall extinguished cholera in Lower Bengal and how with the monsoon it advanced up the valley of the Ganges or Bramaputra or both. He urged that this fact was evidence in favour of the air, plus heat and moisture, being the chief factor of progression. He admitted, however, that instances were on record of the cholera progressing in the face of the monsoon. In 1878–79 the disease left the endemic area and advanced to Oude, the following year it spread over the Punjab on to Cabul. During the epidemic in the north-west in 1878 large numbers of natives went by rail from the infected districts into the Punjab, many dying on the way, yet the disease never became epidemic there during 1878 and did not break out in the non-infected districts. The same thing occurred the following year, when the Punjab in its turn had become an infected district. Cholera then went up rivers and refused to ignite in uninvaded districts or in districts over which it had traversed. He mentioned several instances within his own experience of cholera breaking out under circumstances in which the water-supply could not well be suspected. He asked how it was that cholera sometimes attacked European barracks while the filthy native bazaars close by with a filthy water-supply escaped. He maintained that observation and experiment tended to prove that the comma bacillus could not determine cholera unless there was some other factor present in addition. He insisted that cholera was not infectious or contagious in the ordinary sense; indeed, the wards of a cholera hospital seemed to be about the safest place to live in during a great epidemic. He referred to an outbreak at Allahabad last year which occurred quite suddenly and without any adequate explanation, and he observed that the period of incubation appeared to be not longer than three days. In reference to the transmission of cholera by the air, he referred to the remarkable instance of two hill stations, separated by a deep valley and at a distance of fifteen miles, in which cholera broke out and ceased on the same days, the intervening country remaining free. Admitting that much still remained to be learned in respect of this disease, he characterised quarantine as impracticable, useless and vexatious. He insisted upon the importance of evacuating infected dwellings forthwith, a measure which he considered as even more important than the removal of the patients themselves. As a disinfectant he recommended crude sulphate of iron in preference to dangerous substances such as corrosive sublimate. He concluded with the suggestion that the first opportunity should be taken to try the effects of the transfusion of the blood of the goat directly into the veins of the patient in the algide stage.

The PRESIDENT said that he had had a good deal of experience personally in dealing with cholera, especially in the epidemic of 1846. He was one of the earliest converts to the water theory of Dr. Snow, and all his experience since then had tended to confirm his conviction of the truth of that doctrine.

Dr. MACLEOD of Allahabad referred to the fallacy of dealing with this subject from its general aspect. As to its incidence, it was accidental rather than general, both as regarded communities and places; its mode of progression was also peculiar—going by leaps and starts and travelling in zigzags or forwards and backwards. To use general terms such as waves and areas to describe epidemics was only to add confusion to the subject. So long as the data remained imperfect, so long would any general statement formed on those data be imperfect also.

Dr. SIMPSON of Calcutta said that the conflicting views in regard to cholera which obtained in India and Europe were due to the different methods of investigation adopted. An outbreak in England was succeeded by a local investigation, followed afterwards by statistical evidence; but in India, owing to its immense size and the paucity of medical men, the local investigation was either not conducted at all or was very imperfect, and a statistical statement was relied on in its place. All his experience pointed to the fact that when a careful local investigation had been made the cholera

which had come from a healthy to an infected district was found to have been spread chiefly by contaminated water, milk and food, together with bad drainage. As to the cholera which followed in the wake of the Hurdwar fair, its greater spread in a northern and western direction was due to the fact that the vast majority of the pilgrims came from those directions and returned thither; out of a million present at the fair only about a thousand came from Bengal. There was abundant evidence that the disease spread from a centre of infection; it travelled towards China in the east and towards Europe in the west. In Calcutta a festival was held once every twenty-seven or thirty years, called the Ardhodoya Jog; on the last occasion of its meeting cholera broke out and caused a great mortality at a time when it was unusual for cholera to be prevalent in Calcutta. Though it might be true that no exclusive doctrine would explain all local outbreaks, yet certain media were more likely to be contaminated by cholera poison than others, and in India the medium most commonly contaminated was water. Calcutta, Lahore, Delhi, Nagpoore and Bombay all bore witness to the truth of this; since they had acquired a pure water-supply they had been no longer so subject to epidemics of cholera. The Dutch in Batavia remained free from it, owing to their system of artesian wells; so also in Pondicherry, Rangoon, Colombo, Candy, Singapore and other Eastern towns. The outbreak at Damietta in 1883 was distinctly due to contaminated water.

Mr. E. HART welcomed the remarks of the last speaker, remarking on the value of such a series of affirmative facts connecting a defective water-supply with cholera outbreaks. He had never previously been able to find any light from communications from India on this subject; the reports revealed as a rule nothing but confusion, due in part to the extraordinary difficulties attending the investigation of the disease and in part perhaps to administrative pressure which had been brought to bear on the writers of the reports. Surgeon-Colonel Hamilton had really only enumerated two theories as to the spread of cholera, by water and by air, and as to the latter, the course of his remarks showed that he had totally abandoned it. Cholera certainly did not travel with the air across Europe; the rate of its progress corresponded exactly with the rate of human intercourse. For his own part he believed that water, and water only, was adequate to explain it, and the evidence to prove this was now overwhelming.

Mr. MACNAMARA referred to his experience at Fort William, and said that he had always insisted on the necessity of a pure water-supply. This was provided, and between 1863 and 1873, though cholera prevailed around to a great extent, the mortality in the Fort was extremely small. The monsoons had a great effect in the spread of cholera, for they blew up the rivers small craft, loaded with passengers, who traded with the settlements up the river, and these passengers carried the cholera up with them.

The PRESIDENT having remarked on the extreme importance of the water being boiled by individuals before consumption,

Surgeon-Colonel HAMILTON briefly replied. He said that though he did not deny the enormous value of good water, or the injury caused by bad water, there was something in addition to this which was present to explain the phenomena. He remarked on the difficulty of proving any one theory to the hilt, and said that if the question of water-supply was the sole one, how was it that British troops in perfectly clean barracks with a good water-supply suffered, when within a quarter of a mile the natives in a bazaar would escape, although the water they consumed was filthy?

PATHOLOGICAL SOCIETY OF LONDON.

Myxoma of Humerus undergoing Chondrification.—Fibroma of Male Breast.—Chronic Mastitis of Male Breast.—Hyaline Fibroma of Cow's Udder.—Fatty Tumour from Lip.—Histology of Yaws.—Sarcoma of Sterno-mastoid.

AN ordinary meeting of this Society was held on Dec. 6th, Sir George M. Humphry, President, in the chair.

Mr. EDGAR WILLETT showed for Mr. Howard Marsh a Myxoma of the Humerus which was undergoing chondrification in places and had involved almost the entire shaft of the bone. The limb was removed from a female fifty-four years of age, and the duration of the growth was under one year.

Mr. C. F. BEADLES showed a Fibroma of the Breast removed from a man aged thirty-four, who entered the Cancer Hospital in May, 1891. The tumour, which was of the size of a small walnut, was hard and movable; it lay at the back of the gland imbedded in the pectoral muscle. There were no enlarged glands in the axilla. On microscopical examination it proved to be a pure fibroma without epithelial elements.

Mr. W. ANDERSON showed a specimen of Chronic Mastitis from a man aged thirty-five. The gland began to enlarge six months before the patient came under observation. It commenced without apparent cause and was gradual and painless in progress. It was hemispherical in form, about an inch and a half in diameter at its base, moderately hard to the touch and slightly tender. It was removed at the end of May, 1891, and was found to consist of new fibrous tissue developed around the elements of the gland. Under the microscope the ducts and acini presented no especial change, but around each duct was a distinct area of proliferation, and beyond this the new fibrous tissue was arranged concentrically. The patient was still quite well, but it was worthy of remark that the scar underwent a cheloid hypertrophy. Chronic mastitis in the male in later life was not specifically referred to in text-books, but it appeared to supply a missing link in the pathological analogies of the male and female mammæ, completing the series of evolutionary reactions exemplified in the mastitis neonatorum and mastitis of puberty so well known in both sexes by furnishing a counterpart to the climacteric mastitis of women. The tendencies of the condition were doubtful, whether towards resolution, cirrhotic contraction or malignant degeneration.

Dr. DUDLEY COOPER showed a Tumour which had been removed from the Udder of a Cow. It was of the size of a horse chestnut, hard, freely movable and situated close to the base of the left posterior tent. Microscopically it consisted of dense fibrous tissue, with very few cellular elements, the latter being seen chiefly at the periphery: towards the centre the growth presented a hyaline appearance. He could find no record of a similar specimen.—The PRESIDENT referred to the importance of keeping clear the distinction between tumour and inflammatory growth. In tumour the change originated in the mass itself, and continued owing to an absence of the controlling influences of nutrition. An inflammatory growth, on the other hand, depended on some change from without; it could not increase, though it might be increased. From the structure of the male breast, fibroma rather than adenoma was to be expected there.

Mr. W. EDMUNDS showed a specimen of Fatty Tumour of the Lip, which was situated on the inner and left side of the lower lip. It was nearly spherical and about an inch and a quarter in diameter. It lay immediately under the mucous membrane which was stretched over it, but not ulcerated. On microscopic examination the tumour proved to be a lipoma. Adenomata within the lip were well known, but he had found no mention of a fatty tumour in this situation.—The PRESIDENT remarked that lipomata were seldom seen in places where adipose was mingled with fibrous tissue, as in the palm or sole, but were more likely to occur where fatty matter formed a greater component of the tissue, as in the back or in the shoulder.

Mr. J. JACKSON CLARKE showed for Dr. Beaven Rake specimens of Yaw Tubercles, some of which had recently developed while others were subsiding. Dr. Rake sent with the specimen some interesting observations which he had recently made. He had been using as a cultivating medium ascitic fluid and human serum mixed with glycerine and gelatine. Most of his specimens had been obtained from lepers, although the local growths showed no leprosy bacilli. Although he could find common pyogenic cocci on the surface of the tumours, he could discover no specific cocci in their substance which on inoculation would produce yaws.

Mr. J. J. CLARKE also read a communication on the histology of the Yaws Tubercle. He compared it to a syphilitic mucous tubercle, and referred to the observation that the disease might be an effect of climate on syphilis, which Mr. Hutchinson considered possible. On section the epidermis was found raised up, there was an overgrowth of papillæ and leucocytes which had accumulated beneath the epidermis. Though the specimens had been obtained from coloured people, the tubercles had become totally deprived of pigment. The rete cells were completely divested of this substance, which was found collected in the branched connective tissue cells beneath the epidermis in the papillary layer of the corium. In older tubercles the branched cells had disappeared and the pigment was absent, but in the healed tubercles the skin became again

hyper-pigmented as in the old lesions of syphilis. These phenomena appeared to resemble the flux and reflux of pigment to and from the frog's epidermis.—Mr. HULKE had seen about six cases of yaws, all in blacks, who had come hither from the West Indies. He had been unable to satisfy himself, in some of them at any rate, that the patients had suffered from syphilis. Microscopically the structure resembled granuloma; some of the tubercles ulcerated, whilst others underwent atrophy. In none of his cases was leprosy present.—Dr. COLCOTT FOX described the appearances seen in Yaw Tubercles younger than those shown, which had been sent to him by Dr. Rake. The appearances were precisely those described by Mr. Clarke. Though many accounts of the disease read like syphilis, yet authorities in charge of yaws hospitals stated that the disease was distinct. It was easily inoculable, the mucous membranes might be affected, and in ill-nourished people tertiary symptoms followed, with nodes and gummata. Yet women suffering from yaws were delivered of children showing no sign of syphilis, and people who had had syphilis would readily contract yaws afterwards. Dr. Charlouis of Java had stated that he had satisfied himself by experiment that syphilis and yaws were distinct. It was interesting to note that in Africa parents commonly inoculated their children with yaws, because in youth the disease was milder.

Mr. W. ANDERSON related a case of Sarcoma of the Sterno-mastoid from a female infant aged thirteen months. The patient was suffering from an ovoid tumour about the size of a large walnut, involving the whole length of the muscular belly of the right sterno-mastoid. The growth was of seven months' duration, its evolution slow and painless, and giving rise to no lymphatic affection or constitutional disturbance. The family and personal history of the child were negative. The growth was diagnosed as a spindle-celled sarcoma, and was excised with the whole of the muscle on Oct. 8th last. It was not encapsuled, and required careful dissection from the carotid sheath. On section it was found to consist entirely of spindle cells and to replace the whole of the muscle except a few fibres of the cleido-occipitalis. The child made a good recovery, and at present there was no tendency to wryneck. The case appeared to be the first on record of a sarcoma of the sterno-mastoid, but a like growth was known to have occurred in other muscles. One in the sartorius was referred to by Mr. Erichsen, and here the removal was followed by recurrence.

The following card specimens were shown:—

Dr. F. G. PENROSE: Cirrhosis of Liver in a boy of sixteen.

Dr. E. C. PERRY: Papilloma of Duodenum.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

PATHOLOGICAL SECTION.

Traumatic Malignancy.—Actinomycosis.—Aneurysm of Aorta. "Walking" Typhoid Fever.—Typhoid Bacillus.

A MEETING of the Section of Pathology was held on Nov. 4th, Dr. E. H. Bennett in the chair.

Dr. GRAVES showed for Dr. WHEELER a specimen of Diseased Knee-joint removed from a young man under twenty years of age, who hurt his right knee by falling against a granite stone support when endeavouring to leap a chain. Although he suffered intense pain from the injury he did not seek advice until April (of this year), at which period his knee-joint was circumferentially half an inch larger than his sound joint, caused by effusion; besides, there was a marked circumscribed enlargement upon the inner and upper part of the tibia, just below the articular surface. The effusion into that joint subsided under treatment, the tibial growth rather increased, and was followed by slight glandular enlargement, situated in and corresponding to the saphenic opening. Amputation was performed at the lower third of the thigh and the stump healed. The enlargement in the groin region was not removed at the time of the amputation; it, however, increased in size as the patient convalesced. Removal was advised and recovery ensued. The new growth in the head of the tibia was an osteo-sarcoma; the gland from the groin was infiltrated with osteo-sarcoma. The gland was regarded as especially interesting, as sarcoma does not generally spread by the lymphatics. Probably the gland became affected from the femoral vein. The growth evidently started in the periosteum.

Dr. SCOTT showed a case of Actinomycosis which was found by Sir Charles Cameron in a cow slaughtered in the Dublin abattoir and which is the first case described from Ireland. He gave a summary of the history and of our present knowledge of the disease in the domestic animals and men. The summary was illustrated by microscopical sections of the Irish case and sections of other Scotch cases sent by Professor M'Fadyean; also micro-photographs of the principal features in the sections were shown by the optical lantern.

Dr. J. W. MOORE showed a specimen of Aneurysm of the Aorta opening into the Left Lung and Pleura. The patient, a man aged fifty-seven, had suffered from aortic valve disease and chronic aortitis. He died of hæmorrhage after a series of convulsive seizures. The left pleura was filled with blood; the left lung had been torn by a blood stream which had escaped from an aneurysm of no great size in the descending aorta at the level of the fifth and sixth dorsal vertebræ, the bodies of which were eroded, leaving the intervertebral disc projecting between them.

Dr. J. W. MOORE showed a specimen of extensive Ulceration of both Agminate and Solitary Glands of the Ileum in the case of a patient aged twenty-nine, who died on the ninth day of enteric fever, with symptoms of delirium tremens, terminated by a violent convulsive seizure. The patient had walked about until within thirty hours of his death. Characteristic lesions of enteric fever were found in the ileum for a distance of no less than seven feet from the ileo-cæcal valve—the Peyer's patches near the valve being ulcerated, while those higher up in the gut were still in the stage of *engouement*. The mesenteric glands were swollen and soft. There was considerable enlargement of both liver and spleen.

Dr. M'WEENEY showed the intestines from two cases of Enteric Fever that had occurred during the previous week at the Mater Misericordiæ Hospital. The clinical course of these two cases had been signalised by the predominance of unusual symptoms, tending to make the diagnosis a matter of doubt and difficulty. The first case was that of a female aged nineteen, who was admitted to hospital unconscious and with a high temperature. She lived for four days, but never at any time recovered consciousness. At the necropsy the only morbid appearance found in the course of a complete examination was uniform swelling of the agminated and solitary follicles of the intestine, with some slight ulceration near the ileo-cæcal valve, enlargement of the spleen and great enlargement of the mesenteric glands. The second case was that of a man aged twenty-eight, who had died after a few days' very severe fever, covered with a rash exactly similar to that of exanthematic typhus. At the necropsy the spleen was but slightly enlarged, but the mesenteric glands were considerably swollen and so were Peyer's patches. Cultures had been made in each of these cases from the spleen and pericardial exudation, but as they had been made only on the previous day—that on which death had occurred—the cultures, though visible under the microscope, were as yet hardly to be seen with the naked eye. Dr. M'Weeney expressed the opinion that in future two separate categories of enteric fever would have to be discriminated—one due to the typhoid organism, the other to Eberth's bacillus.

SURGICAL SECTION.

Estlander's Thoracoplastic Operation.

A meeting of this Section was held on Nov. 11th, Mr. Hamilton, President, in the chair.

The PRESIDENT read an address alluding to the various surgical advances that had of late years occurred, and spoke of anæsthesia, antiseptics and vivisection.

Sir W. STOKES made a communication on Estlander's Thoracoplastic operation. After some preliminary remarks on the great advances that have been made in recent years in thoracic surgery, he dwelt on the causes that have of late been chiefly instrumental in enabling surgeons to get better results in the treatment of empyema than formerly, these being mainly antiseptic practice and the adoption of thorough and methodical drainage. He discussed the cases in which drainage would be likely to be sufficient and those in which something more was required, and the question as to whether thoracoplasty should be regarded as only suitable and restricted to chronic fistulous empyemata, and the cases that have frequently been tapped, or whether it ever should be adopted as a primary operation.

He then spoke of the various lines of incision recommended by Estlander and others, but considered that a more important matter was to determine the point where the opening into the cavity of the pleura should be. The views of Mr. Godlee and Mr. Heuston were considered, Sir W. Stokes being of opinion that the situation recommended by them would be, in the majority of instances, too near the diaphragm. The question of flushing the pleura was also discussed, he giving his approval to the practice both during and subsequently to the operation.

Mr. HEUSTON said that Estlander's operation was only required in cases of very long standing, where the conditions as mentioned by Sir W. Stokes existed, and gave rise to a space which could not be occluded unless the chest wall were allowed to adapt itself to the collapsed lung. In the performance of the operation it was important that the periosteum of the rib should not be preserved to a great extent, as it was liable to form new bone to such a degree as to do away with the object of the operation. In the more recent cases operated on by Mr. Heuston he turned the flap of periosteum over the end of the rib where it had been cut across, and thus hindered the absorption of the discharge by the cancellous bony tissue, to which he ascribed the immunity of his patients from pyæmia, which some authors consider the greatest danger from this operation. The only point in the paper with which he (Mr. Heuston) was not inclined to agree, was in the utility of frequent washings of the pleural cavity; and always, in recent cases, he employed only one washing—viz., at the time of the operation, to remove any semi-solid lymph which might be within the pleural cavity.

MEDICAL SECTION.

Lead Poisoning.

At a meeting of this Section held on Nov. 18th the PRESIDENT (Dr. W. G. Smith) made a few introductory remarks, in which a retrospect was given of the work which had engaged the attention of the Section during the last session.

Dr. O'CARROLL then related the history of four cases of Cerebral Lead Poisoning, one of which was fatal. Two non-fatal cases occurred in civil servants who used lead-containing hair dyes. One of these, aged about sixty-two, had a slight hemiparesis, which passed away in a couple of days and recurred in about a fortnight. There was also some visual amnesia and some amblyopia. On discontinuing the use of the hair dye all the symptoms gradually disappeared. The other case was much more severe. The patient had, about once every three months during a period of three years, attacks of violent headache, coma, delirium and sometimes slight convulsions, followed, as a rule, by a period of insanity. The coma lasted from one to six days, the insanity from one to six weeks. The delusions on some occasions were of the grandiose character commonly associated with general paralysis of the insane. The case was from time to time diagnosed as cerebritis, diffused meningitis, general paralysis, and even on some occasions hysteria. After the patient had suffered thus for two years it was surmised that the symptoms must be due to some cause operating regularly from outside, and a hair dye found to contain lead was fixed upon as a possible source of trouble. From the date of the disuse of the hair dye the patient's symptoms underwent a gradual involution. The coma never appeared again, the headache gradually became less frequent and severe, the mental condition became for a time melancholic and then returned to normal health, and he is now, nine years after his first attack, in perfect health. One morbid condition alone remains—namely, that he gets occasional attacks of *petit mal*, from which he never suffered till this illness. The fatal case was that of a plumber who had been in good health up to about three months before death. He at first showed slight mental peculiarities, had headache, and was forgetful. Severe symptoms began with an epileptiform attack, followed by spasmodic contractions of the muscles of the right side, repeated sixty times a minute, with right hemianopia. The mind remained pretty clear, but there was total loss of the sense of personal localisation. In another fortnight he had epileptiform convulsions during about twenty-four hours, followed by partial paresis of the left side. Finally he died in a further attack of frequently repeated convulsions. At the necropsy the arachnoid was seen to be somewhat distended with fluid, so that the cerebral fissures seem to be occupied by cylindrical or spherical cysts. On removal of the arachnoid, after hardening in Müller's fluid, the convolutions were found separated by wide fissures, while at various parts portions of the convolutions were depressed or apparently punched out. In the spinal cord a somewhat similar condition obtained in the lower dorsal region, where the main strands of fibres seemed partially separated from one another by a dissecting sub-arachnoid effusion. Professor Lapper found lead in the liver, the kidney and the spinal cord. Dr. H. C. Earl made an examination of the brain cortex at one of the convolutional depressions and reported the presence of a curious black pigmentation of the neuroglia cells and a similar staining of the neighbouring capillaries; this staining involved only part of the sections.—Dr. FALKINER said that the principal substances which were used in hair dyes were nitrate of silver, pyrogallic acid and acetate of lead with sulphur. He had discovered that nitrate of bismuth—a body insoluble in water owing to the formation of the subnitrate—was soluble when rubbed up with glycerine. This substance dyed hair a rich black.—Dr. H. C. TWEEDY thought it remarkable that the patient who stopped using the hair dye in 1886 should up to the present have occasional mild attacks and that the poison should have taken such a length of time to be eliminated.—Dr. QUINLAN said he had seen a case like one of Dr. O'Carroll's. In this case infection was caused by the use of a lead comb and the symptoms disappeared after the comb ceased to be used.—The PRESIDENT mentioned two cases which had come under his notice. In the first case saturnine symptoms were present. The patient was a manufacturer of sugar sticks and he used chrome yellow in preparing them. Thus the introduction of lead into his system was accounted for. The second case was that of a man who had become incapacitated for his duty and who was pensioned on account of a diagnosis of lateral sclerosis. Dr. Smith noticed he had a blue line on his gums. He also found out that the man had a habit of constantly chewing a pellet of lead. Slow absorption took place, and he developed spinal symptoms. He was treated with iodide of potassium and magnesium sulphate, and got well. Dr. O'Carroll, in his paper, made no mention of the spinal cord or the peripheral nerves being affected. Lead and other elements of high atomicity—such as silver, mercury and arsenic—are very poisonous to the nervous system; they act as protoplasmic poisons. Silver and lead are in many respects analogous. Both form dense albuminates with the tissues, but there is this point of difference—the silver albuminates are insoluble in chlorides and also in lactic acid, while the lead albuminates are soluble in the alkaline and acid fluids of the body. On account of this lead poisoning is more easily caused. The lead is a direct protoplasmic poison, and a little metallic poison does a great deal of mischief in the brain. Of late years a certain quantity of lead has been in some cases abstracted from the cerebrum and cerebellum. The metal forms a direct combination with the albumen. Another proof of its direct action on the nervous elements is shown by histological examination, which reveals certain pigmentary changes. In addition to this, there are certain bad effects on the general health. These two things are sufficient to account for the seriousness of the phenomena and also for their instability witnessed in cases of lead-poisoning. As regards treatment, iodide of potassium does no real harm by increasing the solubility of lead already deposited in the system. The quantity is very small and the increased quantity in solution for a couple of days would not signify. Lead is not excreted by the kidneys to any practicable extent, but it is excreted by the intestines, and it is very liable to be reabsorbed. Consequently, it is always well to combine with the iodide of potassium a saline purgative, such as magnesium sulphate.—Dr. O'CARROLL made a few observations in reply and the section adjourned.

GLASGOW MATERNITY HOSPITAL.—The directors of this hospital state in their report that the revenue has failed to meet the expenditure, owing to which fact the much desired extension of the premises has been delayed, the deficiency in the revenue having to be made up from the capital fund. No donations have been received during the year. The number of patients attended to at their own homes was 1635, and at the hospital 388. The total number of cases attended shows an increase of 104 over that of last year. The Lord Provost, in moving the adoption of the report, said that the financial state of the hospital was such that, if it continued for another three years, the whole of the capital fund would be exhausted. The report was adopted.

Reviews and Notices of Books.

An American Text-book of Surgery for Practitioners and Students. Edited by WILLIAM W. KEEN, M.D., LL.D., and J. WILLIAM WHITE, M.D., Ph.D. Profusely Illustrated. Philadelphia: W. B. Saunders. 1892.

THIS work has been produced by thirteen of the most eminent teachers and practitioners of surgery in the United States of America, but the plan pursued has been a distinct advance upon the method employed in this country when several authors combine to publish a single volume. Instead of each author being alone responsible for the article or articles to which his name is attached, "the entire book has been submitted in proof sheets to all of the authors for mutual criticism and revision. As a whole, the book may therefore be said to express upon important surgical topics the consensus of opinion of the surgeons who have joined in its preparation." The chapters are accordingly unsigned, and no indication is given of the share taken by any one contributor. This is joint authorship of the best kind, and its success in this instance appears to us to have been so marked that it will probably encourage other editors to adopt it. Its success is shown by the unity of plan and even character of the book throughout. Open it where he will the reader notices the same features in the design and the same limitations and peculiarities. The great aim of the authors has been to present the latest developments of surgical theory and practice. Attention is given chiefly to that which is new both in pathology and treatment. A great deal of detail to be found in other surgical text-books is omitted here, or very briefly noticed, while Bacteriology and the details of Aseptic and Antiseptic Surgery receive much attention. This is the great merit of the book. The pathogenic bacteria are well described and figured, and the present position of the science of bacteriology is clearly stated, whilst its well-grounded conclusions are accepted fully and frankly. In the same way, the basis of the therapeutics advocated is a confident belief in the antiseptic treatment. On this the authors speak with no uncertain sound: their faith in it is strong and intelligent and it is the outcome of experience gained from a scrupulous observance of all the minute details of scientific asepsis. It has often been said that antiseptic surgery is only the adoption of cleanliness, and the unobservant have thought that modern antiseptic surgery depends less upon the observance of minute detail than the older practice, when so much stress was laid upon the spray. A careful perusal of the chapter on the proper conduct of an operation will dissipate both these views, and will demonstrate how highly scientific and how exquisitely precise such an operation ought to be. If this text-book is a fair reflex of the present position of the best American surgery, we must admit that it is of very high order of merit, and that English surgeons will have to look very carefully to their laurels if they are to preserve a position in the van of surgical practice.

Having thus expressed our high appreciation of the striking merits of this work we must go on to say that the English reader will miss in it much of the anatomical and clinical detail that he finds in his own manuals of surgery. The writers appear to have been so anxious to present the modern phase of surgical knowledge that they have seemed to ignore much of the learning acquired in other decades and other centuries. We doubt whether this text-book is well adapted for those commencing their study of surgery; it presupposes a good knowledge of surgery, or, at any rate, it will only be appreciated by those who possess such a knowledge. We are anxious to indicate the strong distinctive features of this work rather than to dwell upon details, but we cannot help wondering why adenomata are grouped among mesoblastic tumours, and we regret the exaggerated faith in the value of large doses of alcohol in many surgical diseases. To an English eye "fiber" and "center" are unseemly; but we are not without hope of the editors, for more than once we find "fibre" has crept in, showing that they have apparently an open mind on the subject.

Dermic Memoranda. By WILLIAM GEMMELL, M.B. Glasgow: A. Stenhouse. London: Baillière, Tindall and Cox. 1892.

THE aim of this *brochure* of 116 pages is to give the student the essential facts of dermatology and the diagnosis of the exanthemata. The latter portion of the author's task has been fairly well fulfilled, as might be expected, as he has been a resident superintendent of a fever hospital. Of the former portion we must speak less favourably. It is very doubtful whether "thumb-nail" books of this class, even when accurate, do not give the student as much to unlearn as to learn, dogmatic statements in medicine so frequently requiring qualification. Moreover, it needs no little judgment founded upon practical experience to know what are really the most essential and diagnostic facts to be remembered. The work before us, though not discreditable to a young man, which the author presumably is, exemplifies this, and contains inaccuracies and omissions of important diagnostic points which further experience would enable him to avoid. Thus, in contrasting scabies with eczema pustulosum, he speaks of vesicles as if they were synonymous with pustules, and says that eczema does not often occur on the hands and that itching is absent. Xanthoma nodules are said to be painful, alopecia areata is often hereditary, and psoriasis is spoken of as not being a disease of childhood, and when it occurs on the sole the student is told to suspect syphilis—to say the least of it a misleading way of stating that there is a scaly plantar syphilide sometimes called "psoriasis." "Bullate" for *bullous* and "discreet" for *discrete*—the latter occurring too often to be merely a misprint—are only minor faults.

LIBRARY TABLE.

Epidemic Skin Disease. BY THOMAS D. SAVILL, M.D. London: H. K. Lewis 1892.—This is a reprint of the various articles published by the author on the remarkable epidemic or rather endemic disease of the skin resembling either eczema or pityriasis rubra which occurred chiefly in the West-end of London during the summer and autumn of 1891. It contains a coloured plate and several reproductions of photographs, and to those who wish to possess a valuable record of this unprecedented outbreak we can recommend this *brochure* of sixty-four pages, which is well got up in plates and typography and enclosed in a parchment cover.

The Bacteriological World and Modern Medicine is doing good work in bringing together abstracts of a number of most important papers that are published on this side of the Atlantic, and at the same time of placing before its readers a number of original articles, especially those written in America. The most interesting and important original articles in the August number are those by Dr. J. H. Kellogg, on the New Chemistry of the Stomach, in which he criticises the work of Ewald and Boas, and Hayem and Winter's "Chemismus Stomachal" (Dr. Kellogg's paper is, however, not completed in this number), and Dr. J. M. Byron's description of an apparatus for cultivating anaerobic bacteria, either in plates or in tubes, which has the special advantage that in it either plates or tubes can be utilised, and they may be removed from time to time for examination. The chief point about this method is that hydrogen is retained in the bell jar by means of a layer of mineral oil. The more interesting translated articles

are Dr. Kitasato's Results of Pure Cultures of Tubercle Bacilli and other Pathogenic Bacteria from Sputum, and that of Professor Dujardin-Beaumetz on the Liver as a Bile-making Organ. In the monthly bulletin from the Laboratory of Hygiene, by Drs. Kellogg and Paquin, we find an account of some Experiments on the Relative Influence of Germs and their Products in the Production of Disease, and a continued (illustrated) article on Liver Flukes in Cattle.

Fever Nursing: a Course of Lectures on the Nursing Required in Cases of Ordinary Fever. By MARY HARRIS, Matron of the Suffolk General Hospital, Bury St. Edmunds, Member of the Council of the Royal British Nurses' Association &c. London: The Record Press, Limited, 376, Strand, W.C. 1892.—This is a good sample of the Record "Booklet" series. The authoress tells us that the articles originally appeared in 1888 in the *Nursing Record* in a serial form, and that they are republished in consequence of the numbers of the journal in which they appeared being out of print. The nursing and management of the following diseases are dealt with—viz., scarlet fever, typhoid fever, typhus fever, chicken-pox and small-pox; and at the end a couple of pages of examination questions are added. We have been much gratified with our perusal of this little book, which, if it makes no claim to originality, nevertheless contains much sound and useful information well put together. The salient pathological and medical points connected with these fevers, with which every intelligent and educated nurse should be acquainted, are clearly and sufficiently set forth, as well as those points which have a direct practical bearing on the nursing and management of these diseases.

Aix-la-Chapelle as a Health Resort. By Drs. ALEXANDER, BEISSEL, BRANDIS, GOLDSTEIN, MAYER, RADEMAKER, SCHUMACHER and THISSEN. The English edition, translated with the sanction of the civic authorities by JAMES DONELAN, M.B., M.Ch., B.A.O. &c. London: J. & A. Churchill. 1892.—This work consists of a general description of Aix-la-Chapelle and its baths, together with a collection of essays by the physicians of the locality. "The baths," we are told, "vary in temperature from 47° to 74·6° C. ..... The douche is always administered in the bath itself. The doucheur or doucheuse enters the bathroom with the patient, and supplements the action of the douche by means of kneading and massage, or moderates the force of the jet with his hand, while he allows it to play in a slanting direction. The patient does not need to go into a separate douche-room, as is the custom in so many other establishments, but he remains some time longer in the bath after the douche in order to assist its action. Vapour baths have been placed in all the bath houses, and are supplied by the natural hot vapours of the thermal waters, which are formed either at the outlet of the lower spring or whilst flowing down in one of the channels fed by the principal spring. ..... The vaporised thermal water can also be inhaled by suitable spray apparatus." The second part of the work contains papers on the Treatment of Gout, Chronic Rheumatic Arthritis, Arthritis Deformans, Diseases of the Skin, Injuries and their Consequences, Chronic Catarrh of the Digestive Tract, Chronic Catarrh of the Pharynx, Larynx and Bronchi, Syphilis, Diseases of the Nervous System, Tabes Dorsales, Syphilitic Diseases of Internal Organs, Chronic Metallic Poisoning and Diseases of the Eyes. The translation appears to have been done carefully, though here and there little Germanisms may be detected; and in the list of chemical constituents of the waters we find "iodide of soda," "chloride of ammonia," and "phosphate of soda." These are, however, but mere verbal defects in a very valuable scientific account of one of the most important thermal springs in Europe, which will well repay perusal by any physician who thinks of sending a patient to Aix-la-Chapelle.

Handbuch der Physiologische Optik. Von H. VON HELMHOLTZ. 2te Aufgabe, 7te Lieferung. Hamburg and Leipsic: Voss. 1892.—The issue of the parts of this important work proceeds with unaccountable slowness. No doubt Helmholtz is a very busy man, and it cannot be denied that considerable additions have been made to the original treatise; but the first part of the second edition appeared in November, 1885. It was announced that the work would be completed in ten parts; the seventh part is now reached, and only about half the work is finished, whilst seven years have elapsed. If the same time is taken for the second half, a revision of the first 500 pages will be requisite. The present part deals with the phenomena produced by quickly recurring impressions, such as those obtained by spinning tops with coloured discs and the images obtained by Maybridge and Auschütz, which, the author rightly observes, present the movements of animals with extraordinary fidelity and supply important information in regard to the muscular movement of animals. The part also contains an account of after-images and of contrast and complimentary colours, and concludes with some observations upon induced colours.

The Journal of Physiology. Edited by MICHAEL FOSTER. Vol. XIII., No. 6. Cambridge Engraving Company. October, 1892.—This part contains the following memoirs: V. D. Harris and W. J. Gow, Ferment Actions of the Pancreas in Different Animals; R. T. Hewlett, Fractional Heat Coagulation; W. T. Porter, Researches on the Filling of the Heart, with two plates; J. N. Langley and H. K. Anderson, on the Mechanism of the Movements of the Iris; A. E. Garrod, on the Occurrence and Detection of Hæmatoporphyrin in the Urine, with a plate; C. S. Sherrington, Notes on the Arrangement of some Motor Fibres in the Lumbo-sacral Plexus, with four plates.

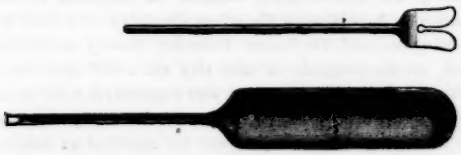
New Inventions.

SACKLINS' PATENT READY-MADE POULTICES.

THE linseed poultices are made with the best crushed linseed, containing the full quantity of oil, and the linseed is sewn securely between muslin and waterproof calico, the latter keeping in the heat and moisture. They also contain 2 per cent. of boric acid, which is dissolved at the time of using and renders them antiseptic. The septic qualities of the ordinary poultice are done away with, and these poultices can be applied to an unbroken surface with safety. The sewing is done in such a manner that the linseed is secured in many square-shaped compartments, and by cutting along the seams it is possible to make them of the required size. When wanted for use, it is only necessary to pour boiling water over the poultices and to apply them. It is said that they may be redipped in boiling water and applied thirty times consecutively without appreciable diminution of their remedial value. The least experienced nurse can hardly spoil them, and they are certainly of much greater cleanliness in use than the average poultice of domestic life; no pieces of linseed adhere to the skin on their removal, and as they are ready-made and can be at once applied, they should find a ready sale; they are, moreover, cheap. The mustard poultices are made of pure mustard flour and ground mustard husk which contains a large percentage of bland oil, and prevents the painful effect of the mustard They are mild and are said not to blister the skin should the patient fall asleep and wear one all night; they can therefore be tolerated for a long time and the effect of the counter-irritant is made more lasting. They are manufactured by Messrs. Sacklins and Co., 20, Royal Exchange.

INSTRUMENTS FOR BONE SUTURE.

ANNEXED is a woodcut of the bradawl and director used at the West London Hospital in suturing bones, either by subcutaneous or by open operation. They were made for me by Messrs. Maw, Son and Thompson in April, 1889. The bradawl is of one piece of steel, without any angles or mouldings to collect dirt, and is nickel-plated. These peculiarities are, of course, for ease of purification. It is also used for aseptic cases only. The director is a size less in diameter than the bradawl and ought to be of uniform calibre throughout. That it is not quite so in the specimen drawn is an accidental error. Like the bradawl it is of steel, nickel-plated. The blade of the bradawl is 3¼ in. long and of a size intermediate between a No. 8 and No. 9 catheter (French scale). The director is of the size of a No. 7 (French) and the wire generally employed is equal in thickness to No. 3 (French). The length of the bradawl is a great convenience and is intended to make it available for the subcutaneous suture of superficial bones, like the patella and olecranon. About two years after these instruments had been constructed first a long drill-bit perforated at the end, and afterwards a long bradawl, also perforated at the end, were described and recommended for subcutaneous suture. The idea of a perforated bradawl was rejected at the time when the instruments I am describing were first planned, as tending to at once increase thickness and diminish strength;



for a too thick awl will split a patella and a thin and perforated awl is liable to break. These are not mere theoretical objections; I have seen the patella split in three cases and I have in my possession the broken stump of a perforated bradawl made two years and a half ago. With the long-bladed awl and director to match I have sutured various bones, including the femur, the tibia, the patella, the olecranon and the astragalus and scaphoid. The director should be passed as far as the bone along the awl before the latter is withdrawn; and of course the wire, previously straightened, is slipped through in the groove of the director. When wiring subcutaneously the wire, after passing through the bone fragments and emerging at the second skin aperture, is returned through the same aperture along the director, previously thrust back between the skin and the bone, to the original skin opening. Also, when the awl has perforated one fragment it should be used carefully as a probe (in conjunction with digital palpation from without) to ascertain the bearings &c. of the other fragment. In this way can be avoided the error of attaching the anterior surface of one fragment to the fractured surface of the other in a patella case. The results which can be got by such operations as Mayo Robson's show that the inversion of periosteum between fragments of patella has not the practical importance once attached to it. Close union of any kind, either bony or fibrous, suffices in the case of a bone which is merely inserted in an aponeurosis and which does not form part of the main skeleton. The openings made for and by the awl and director give ready egress to all liquid effusions, but not of course to clots.

Grosvenor-street, W. C. B. KEETLEY, F.R.C.S. Eng.

THE HECLA FOOT AND BED WARMER.

MESSRS. W. SHIRLEY AND CO. of Lord-street, Wolverhampton, have submitted to our inspection a specimen of the above appliance. It consists of a cylindrical vessel about a foot in length, made of block tin, with a screw stopper, and enclosed in a woollen jacket. The convenience of form renders it applicable to the two purposes of bed-airing and foot-warming. It is cheap and handy, and is likely to prove a welcome adjunct to household comfort.

THE COMMON ROOM FOR FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

IN pursuance of a resolution of the Council of the Royal College of Surgeons of England the room, adjoining the secretary's office, which formed part of the library not used by readers has been furnished as a common room for the use of Fellows and Members of the College. The room, which is spacious, and looks on to the garden of Lincoln's-inn-fields, has been handsomely and comfortably furnished with a Turkey carpet, two walnut octagonal tables, writing tables, settee, and a suite covered in morocco leather, together with a hat stand and umbrella stand. The principal daily and weekly newspapers are also provided. The regulations for the common room are the following:—

"1. The common room is open to Fellows and Members of the College only. 2. The common room is open on each week-day from 11 A.M. till 5 P.M. except Saturdays, when it is open from 11 A.M. to 1 P.M. It is closed during September and at such other times as the Council may direct. 3. No formal meeting of any description may be held in the common room. 4. Fellows and Members writing letters at the College may not use the College as their address.

"*Note.*—Fellows and Members are reminded that smoking is not permitted in any part of the College premises.

"Nov. 10th, 1892." "EDWARD TRIMMER, Secretary.

The common room was opened on the day of the Bradshaw Lecture, Thursday, December 1st. A good fire is kept burning and the room wears a cheerful and comfortable aspect. Writing materials are provided. Probably very few of the Fellows and Members of the College are at present aware that a common room is in existence and it may be anticipated that it will be found useful by those who frequent the library and museum, or attend the lectures and meetings at the College. The room was obtained for the Fellows and Members through the application of the Association of Fellows to the Council of the College.

THE DENTAL HOSPITAL OF LONDON.

THE annual dinner of the past and present students of this institution was held on Saturday last at the Café Royal. Sir Richard Quain, F.R.S., supported by Dr. Hare and Mr. Bryant, the President of the Royal College of Surgeons, occupied the chair. The health of the past and present students having been proposed and duly honoured, the chairman alluded to some of the more distinguished men who had passed through the hospital and school. Referring to the action of the General Medical Council, he said they are willing to take, and are taking, great interest in advancing this department of the healing art, and he could assure his hearers that that body would do all in their power to help the dentists; but they must help themselves, and he could prophesy a great future for them if they would avoid unprofessional actions and devote themselves earnestly to their noble profession. Mr. Bryant recognised in the hospital a valuable institution for the treatment of the suffering poor, and in the school an excellent educational establishment which provided properly qualified and skilled dental surgeons for the rich. Dr. Hare, replying for the hospital, urged its claims upon public sympathy and monetary support to provide increased space and larger opportunities for work. Dealing mainly with statistics, the dean of the school, Mr. Morton Smale, said that the development which had taken place on the scientific side of dental surgery, and the fact that it was now a legalised profession, had produced two results—first, an immense increase in the number of cases treated (last year the numbers were 54,177); and, secondly, a large increase in the number of students. This tended to a crowded state of an already over-burdened institution, and the only remedy was to provide a new and more commodious hospital building. Such a change would necessitate an expenditure of £40,000, of which £3000 had already been promised by members of the staff and friends. He was confident that the public would soon provide the remainder. An excellent programme of music, which was partly contributed by the Hospital Glee Society, added to the enjoyment of the evening.

THE LANCET.

LONDON: SATURDAY, DECEMBER 10, 1892.

THE hospital problem, or rather the problem of hospital support, still continues, in spite of the Lords' Committee, to be an anxious one. Something in the way of excuse for delay must be set down to the recess. It is not in human nature to study such problems during holidays, or when grouse and partridges have to be dealt with. Our readers may remember that a conference was held in May, at Spencer House, of some of the principal governors of the larger London hospitals, to consider whether anything could be done in regard to certain recommendations made by the Lords' Committee. A committee was appointed to take into consideration the whole of the recommendations and to report to the conference. That committee, we understand, has met once, and a subcommittee of four was then appointed to make a detailed examination of the Lords' proposals in the report.

The public will anxiously look for the suggestions of this subcommittee. It is obvious that if any practical result is to follow the laborious and painstaking investigation by the Lords' Committee time must not now be lost. The report of such a committee is never so strong as when it is fresh in the minds of the public, and when those who have framed it are full of the interest of the subject and the information they have gathered. The principal recommendation of the Lords' Committee is certainly that in favour of the creation of a Central Board. There is much difference of opinion as to the feasibility of such a Board, or rather as to the feasibility of all the powers suggested by the Lords' Committee. It proposes that this Board may receive endowments, legacies and donations, and have power to publish complete statements as to the pecuniary position of each medical charity &c.; but it does not invest it with the much-needed power of controlling the erection of new hospitals, which are likely to compete with existing institutions whose wards are empty for want of funds. No doubt he distribution of existing hospitals is very faulty, but this objection is considerably weakened by the improvement in the ambulance arrangements of the metropolis, which are as yet imperfectly enjoyed by the hospitals and the patients who enter them.

Apart from the debateable portion of the report it is full of suggestions which cannot be too soon tested by being subjected to minute examination by those who are really interested in the maintenance of our existing hospitals. Some central supervision is wanted, and so long as it is helpful and friendly, not too imperious, and does not tend to compete with individual hospitals or withdraw credit and endowments from them, it is likely to be acceptable to the governors of the different institutions. The Hospital Sunday Fund and the Hospital Saturday Fund have always been very respectfully treated by the committees and governors of the various institutions, largely because these funds have given a great amount of help with the smallest amount of interference and of criticism. If the subcommittee now engaged in detailed examination of the Lords' proposals can suggest a Central Board that will be as little officious and as helpful as the councils of these funds it will do much to give effect to the Lords' main proposal, and also to all the other principal recommendations.

The voluntary support of the hospitals and dispensaries is, and must continue to be, their glory and their strength. Nothing in the functions of the Central Board must be allowed to offend the sense of independence or the *amour propre* of the individual institutions. Public opinion is still in favour of our voluntary system, and the Lords' Committee recognises this, and rejoices in the fact. Its report is friendly, and, with the exception of an inadequate note on the out-patient abuse, is satisfactory, and even complimentary to the system. It recognises that the function of the hospitals is essentially a charitable one; and that so long as they keep to this character and guard against abuse they are worthy of all the support of the rich and well-to-do classes, who benefit indirectly by them as educational institutions and training schools of the highest medical and surgical skill. This is the overwhelming estimate of hospitals in this country. A gentleman the other day tried to induce the Birmingham and Edgbaston Debating Society to declare that, as the hospitals of the city exist for the benefit of the whole of the community, and especially for the benefit of the medical profession, and are now so largely supported by the artisan class, they should be regarded as coöperative institutions rather than charities. The proposal was rejected by a large majority, as it deserved to be. Hospitals are for exceptional cases, not for common complaints. Without making any invidious comparisons of the way in which they have been supported by different classes, they have been a noble feature in the charities of this country; and the exhaustive examination of them by the Lords' Committee emphasises this conclusion. To convert them into mere coöperative stores for the relief of all comers, and of comers that should be attended at home by the family or the club medical man, would alienate their principal supporters. Birmingham did well to reject such a trade view of its great hospitals.

IN his recent work on "The Climate of Rome and the Roman Campagna," Professor TOMMASI-CRUDELI devotes a valuable chapter to the subject of the preservation of human life in malarious countries. Our readers will be glad to have in a compact form the views of so eminent an authority on this very important and interesting topic. We must be content to admit that for the present we have no precise knowledge of the nature of the malarious poison or of the means whereby it can be extirpated from the soil of an infected locality. That the poison inheres in the soil; that it is greatly under the influence of season, temperature and rainfall; that it is excited to fresh activity by all measures involving the disturbance of earth long left quiescent; that its ravages have been much reduced by drainage, by the conversion of naked soil into meadow land, and by the erection of houses and laying down of paved streets—these facts are certain, and almost exhaust our knowledge on the subject.

Professor TOMMASI-CRUDELI points out that the traditional precautionary measures long adopted in malarious countries have had two ends in view—viz., to reduce as much as possible the quantity of the malaria ferment which enters into the system through the air breathed and to prevent a lengthened abode of the same in the system. The first point is sought to be achieved by avoiding agricultural operations during those hours at which the malarious influence is most potent—viz., about sunrise and sunset; hence, according to the writer, is really explained the much misunderstood dictum of the ancient Sybarites: "If you wish to live long and well do not ever see the rising or the setting sun." Another point of the greatest importance is to avoid breathing the air in close contact with the soil, as it can be shown that the malarious poison rises only a short distance in a vertical direction. Thus in the Pontine Marshes, an intensely malarious region, platforms four or five metres high are erected, upon which the people sleep in the open air with comparative impunity. In Greece, the jungles of the East Indies, and Central and Southern America, similar devices have been adopted with beneficial results. Another mode of eluding the malaria-laden air in close contact with the ground is to construct the dwellings in such a way that when the door is shut the internal atmosphere is renewed only by the strata of the local atmosphere which are near the roofs of the houses. This is managed in some localities by so arranging that the only opening in the outer walls is the door, and all the windows open on an inner yard at a higher level than the ground floor of the house. It is advisable also to keep the windows of the houses closed in the morning and during the early hours of the evening, especially if any excavations should be going on in the neighbourhood. Care should be exercised regarding the effects of placing vases of flowers in occupied rooms; either these should be entirely excluded from houses when malaria is rife or the utmost vigilance should be taken to secure thorough ventilation.

The above measures all aim at preventing the reception of the malarious poison into the system or of reducing the amount received. Other measures are directed to preventing the germs, already absorbed, from remaining in the human body for any length of time. These measures, according to Professor TOMMASI-CRUDELI, all resolve themselves into expedients for maintaining in an active and regular condition the circulation of the blood. Everything that tends to keep the secretions healthy and active promotes the elimination of the malarious poison and reduces the probability of it effecting destructive changes in the body. The principal indications are to maintain constitutional vigour by good nourishment, the moderate use of wines and spirits, and to avoid all disturbance of the system from variations of temperature. Hence warm clothing, even in the hot season is indispensable.

The difficulties regarding the above preventive measures are the time, expense, self-restraint and inconvenience involved in carrying them out. Acclimatisation comes to our aid; not, however, acclimatisation of the individual, but of the race. "This power of constitutional resistance has been proved to be hereditary, and the repeated selections, caused by malaria in each generation, have conduced to the eventual increase of the resisting powers of the race, and that to such a degree as to enable it to found powerful colonies in unhealthy sites, such as in Italy were those of Selinunte, Agrigentum, Sibaris, Pæstum and Rome."

The chief remedies that have been used to combat malaria are quinine, arsenic, eucalyptus, salicylates, the fruit of the lemon &c. The good effects of quinine are, of course, unquestionable. Its anti-malarious influence is, according to Professor TOMMASI-CRUDELI, rapid but fugitive. Quinine is, unfortunately, rather expensive and tends after a time to disturb the digestive organs and the nervous system. Arsenic the writer regards as a remedy of the very highest value, especially as a prophylactic. He has instituted extensive experiments among the properties of the landowners of Tuscany, Rome, Puglia and Sicily, and among the workers on the Roman and southern railways with encouraging results. Dr. RICCHI, the chief medical officer of the southern railways, experimented in the year 1883 upon seventy-eight persons in the district of Bovino, where malaria is very virulent. He divided them into two categories, one of which only was subjected to the preventive system by means of arsenic. The result was that the great majority of those who took no arsenic (we are not told the precise number) had violent attacks of fever, while of those subjected to the arsenical treatment thirty-six escaped entirely, whilst the remaining three had only slight attacks. Other experiments were not less satisfactory, and some cases of failure were attributed to the arsenic having been administered in a non-assimilable form. Professor TOMMASI-CRUDELI has no faith at all in the alleged anti-malarious influence of the salicylates, and attaches hardly any greater value to the use of eucalyptus. He also disputes the alleged beneficial results said to have attended the planting of eucalyptus trees in malarious regions. He thinks much more highly of a popular remedy widely employed in many parts of Italy, Greece, Arabia, the West Indies &c.—viz., preparations of the lemon tree. The most active preparation is said to be a decoction of the whole lemon fruit, and remarkable results are claimed for this cheap and simple remedy.

The net result of Professor TOMASSI-CRUDELI'S experience would seem to be that hygienic and dietetic measures are of the greatest importance in dealing with malaria, that arsenic has a true prophylactic influence, and that quinine and a decoction of lemons are the most valuable remedies during the actual attack.

HYDATID disease is sufficiently common in this country to make its treatment a matter of widespread interest in the profession; but the interest we feel in it here is as nothing compared with that felt by those who practise surgery in the Antipodes. There the question is often discussed in medical journals and at meetings, and it was most fitting that, at the Intercolonial Congress held at Sydney in September last, a special debate should have been arranged to elicit the opinions of those most experienced in the treatment of hydatid disease. The discussion showed that to a large extent there was no difference of opinion, although on one point the divergence of view was marked enough. All the speakers were agreed that in suppurating hydatids, and in hydatids with daughter cysts, aspiration of the tumour is ineffectual, and that the only proper treatment when the cyst is accessible is a free aseptic incision into the cyst with complete evacuation of its

contents. In hydatid disease of the lung aspiration has proved to be a very dangerous operation on account of the facility it affords of flooding the lungs with the cystic fluid. This point has been well illustrated by cases published in this country, notably by Dr. BRISTOWE and Dr. MACKENZIE, which are to be found in Vols. XXIV. and XXV. of the Clinical Society's Transactions. For such cases a careful incision into the pleura, followed by the free and complete evacuation of the cyst, is the best course.

The vexed question is, What is the best course to follow in cases of simple hydatid cyst of the liver or peritoneum? Dr. SYDNEY JONES and Dr. SCOTT SKIRVING advocated the treatment by aspiration, care being taken to employ a small needle, not larger than one-sixteenth of an inch in diameter, with full antiseptic precautions. They urged this on the ground of its simplicity and its safety, and also because, if followed by refilling of the cyst or suppuration, incision of the cyst can be practised without any additional risk or difficulty. They argued that inflammation of the sac is due to pyogenic organisms introduced by the needle, and that leakage from the puncture only occurs when a needle of large size is used. Dr. JONES points out that very soon after being emptied by an aspirator the tumour may be as large and tense as before aspiration, even in a few hours, from inflammatory exudation. He cautions his professional friends against mistaking this for refilling of the cyst with its proper fluid. The diagnosis is made by watching the cases. Where the cyst has become filled with serum, it begins to shrink in a few days and eventually all is absorbed. Where the fluid is cystic no such improvement takes place and treatment by incision has to be employed. Dr. JONES believes that many instances of so-called refilling of the cyst with hydatid fluid are cases of multiple cyst in which a second cyst has enlarged and occupied the space formerly taken up by the first. This is a matter hardly capable of proof.

The other view seems to have been the one held by a large majority of those present at the Congress. They advocated the entire abandonment of the aspirator and the employment of aseptic incision and evacuation of the cyst in every case which is accessible to the surgeon. In support of this view they refer to its safety when proper antiseptic precautions are observed and to its certainty of result. They oppose the use of the aspirator chiefly on the ground of the danger of its setting up suppuration or of leakage from the puncture into the peritoneal sac. They also urge that at the best it leaves the patient with a dead, collapsed hydatid cyst, and that it must be better to get rid of such a mass from the body than to have it lodging there indefinitely. Each party in the discussion quoted statistics and spoke with the fullest confidence in its own special views. It seems clear that surgical opinion has very largely veered round from faith in aspiration to distrust of it, and from fear of the radical treatment of the cysts to the fullest confidence in it. Time and experience will enable more evidence to be collected and sounder opinions to be formed. It is in harmony with the whole tendency of modern surgery to prefer the more radical measure and to abandon aspiration. We can hardly think that the hands of the clock will be put back and that surgeons will recur to an operation which is at best uncertain and sometimes mischievous. Dr. SYDNEY JONES and Dr. SCOTT SKIRVING have done good work in calling attention very prominently to the conditions under which aspiration becomes a safe operation, for it is clear that up to the present it has been attended with a considerable mortality. But, unless we are mistaken, we shall before long see it abandoned entirely and aseptic incision and drainage regarded as the one trustworthy mode of dealing with hydatids of all kinds and in all situations which are accessible to the surgeon.

IN a recent number of the *American Journal of the Medical Sciences* Dr. ALLEN STARR of New York has written a paper of very great importance and of more than ordinary interest, in which he has brought together various cases observed by himself and others, from a study of which he is able to lay down some very definite rules as regards the symptoms of lesions situated low down in the spinal cord. The facts are drawn from the records of OPPENHEIM, ROSENTHAL, WESTPHAL, HUBER, BERNHARDT, OSLER, MILLS and EULENBERG, as well as from the observations which Dr. STARR himself has made in association with HERTER, LLOYD and MCBURNEY. In many of the cases the clinical facts are compared with the conditions found post-mortem, and as a result of comparison of the various conditions it has been possible to lay down a certain number of deductions of the greatest interest and of much practical importance. Thus it is found that the control of the sphincters of the bladder and rectum is lost when the lesion involves the lower three sacral segments, and the opinion is expressed that these centres probably lie in the two lowest segments of the cord. When these are destroyed the sphincter of the rectum is relaxed, and the entire rectum loses the power of emptying itself, so that artificial evacuation by means of enemata or excavation is necessary. As regards the bladder, on the other hand, the sphincter does not appear to be permanently relaxed when the cord is destroyed, so that constant dribbling rarely, if ever, occurs; but as soon as a few ounces of urine collect, the pressure is sufficient to overcome the slight resistance of the sphincter, and the urine flows away. Sufficient resistance in the sphincter to cause retention of urine is rare when the bladder centre is destroyed. Such a condition is more apt to occur when the lesion is situated higher, this effect then being due to irritation of the bladder mechanism. The same effect seems to be produced by lesions of the cauda equina, the result then being apparently due to a reflex irritation from sensory fibres. From this it is concluded that if, in a case of paraplegia, the mechanism of the bladder and rectum is not interfered with, so that these viscera empty themselves when full, the lesion has not destroyed the lower sacral segments of the cord. The other important deduction is as to the distribution of anæsthesia in lesions of the lower part of the cord. This is shown by means of ingenious diagrams constructed from a careful comparison of the conditions found in the different cases. The first zone is oval in shape and small in extent, including the perineum, the posterior part of the scrotum in males, and the vagina in females. It also included the mucous membrane of the rectum. The second zone is heart-shaped, with the point up, and includes the entire scrotum and posterior surface of the penis and mucous membrane of the urethra in males, and in females the entire genitals except the outer surface of the

labia majora and the mons veneris. These two zones can be separated clinically, but all that can be affirmed from post-mortem evidence is that the second zone is produced by a lesion involving the conus medullaris and the fifth and fourth sacral segments of the cord.

The third zone has been named the "saddle-shaped area," as it roughly corresponds with the surface of the body in contact with the saddle when riding. Such an area is shown by a necropsy to be the result of a lesion involving the fifth, fourth and third sacral segments. The fourth zone is larger but similar in shape to the third. The anæsthesia extends in the form of a stripalmost as low as the popliteal space. Clinically this area has been evident in several cases, but so far there is no direct post-mortem evidence of its origin. But as it lies between two zones, one of which is the result of lesion of the third sacral segment and the other of the fifth lumbar, it seems evident that it is the result of a lesion of the second and first sacral segments. The fifth area is more extensive still, descending the back of the thigh through the popliteal space in a band and thence to the outer surface of the leg and foot. In some cases it stops at the ankle, in others it involves the entire side of the foot, dorsum and sole, and three and a half toes. This area corresponds to the fifth lumbar segment. The sixth area of anæsthesia is a result of lesion of the third lumbar segment. It involves the entire back of the thigh and leg and also the front of the thigh, except a funnel-shaped area with its broad end upwards. The narrow end of the funnel extends along the shin, even on to the foot, and the opinion is expressed that this zone will probably be differentiated into two, one corresponding to the third lumbar segment, the other to the fourth. The largest area of anæsthesia is produced by a lesion of the four lower lumbar segments. It follows the line of Poupart's ligament, and is much lower in front than behind. The abdominal walls are only affected if the first lumbar segment is diseased.

Such are the conclusions which Dr. STARR draws from his observations of the very interesting series of cases which he has been at pains to bring together. Their importance in regard to exact localisation is very great, and we have no doubt that further observations in the near future will enable the small gaps in the scheme to be filled up, and so complete a piece of work which is a model of careful and painstaking observation and deduction.

IN the *Medical Chronicle* for September Dr. J. G. ADAMI (now Professor of Pathology in the University of Montreal) contributes a most interesting article on the Variability of Bacteria and the Development of Races. He has collected a very large number of records of variations in the manner of growth and modifications of the specific characteristics of some of the better known bacteria, and although it is impossible to agree with some of the conclusions arrived at as the result, no doubt, of a careful consideration and generalisation on these observations, the facts themselves, as marshalled in this paper, cannot but prove to be of great interest and value. First he deals with transient variability under the headings of change of form, changes in pigment production, variations of ferment production and modifications of pathogeneity; he records the many changes that have been observed by various workers in organisms obtained from different sources and cultivated on various media; and he indicates how, although some of these changes may be transient and the original forms may be reproduced by transferring the organisms to suitable media, other alterations may remain more or less permanent. One very striking feature on which stress is not laid and has never been laid in this matter is that, although it has long been well known that the typhoid bacillus when separated by means of the carbolic acid method undergoes distinct morphological changes, this has never properly been associated with the marked diminution in virulence of the organism—a character which, once lost, it is very difficult to restore, the morphological characters being resumed under appropriate conditions much more readily than the specific pathogenic properties, and much of the haziness that exists on the question of the alteration of the virulence of the typhoid bacillus must undoubtedly be attributed to our imperfect methods of separating it and cultivating it outside the body. The colour variations, especially those of more permanent character, are described pretty fully, GESSARD'S observations being made the basis on which the remarks are founded. The other interesting question of the identity or specificity of the streptococcus erysipelatis and streptococcus pyogenes is taken up in the discussion on natural races. Dr. ADAMI appears to agree with CROOKSHANK, BEHRING and FRAENKEL that these two organisms are identical, and that the differences as regards manifestation when introduced into the animal body are due entirely to the different tissues or positions into which they are inoculated. There can be little doubt that recent experiments confirm this idea, although we have still to get over the fact that the chemical products of these organisms differ somewhat seriously when they are cultivated outside the body. It may be, of course, that they are modified according to the position of their growth in the body, but it still would appear that the chemical products of the organism play an important part in determining the pathological manifestation indicative of their presence in the body. It is not necessary to follow Dr. ADAMI in his remarks on the observed modifications of pathogenic microbes, the examples which he gives being those of pneumonia, typhoid fever, cholera, tuberculosis and diphtheria. We have so little standard as to what should constitute a race, what a type, and what a variety that no two observers will place exactly the same value on Dr. ADAMI'S generalisations; and we cannot but think that in some instances he has assigned far too great importance to trifling variations, whilst in other instances more important factors have been left out of account. Unfortunately we have as yet no standard either of nomenclature or of classification. It may be objected that, with the limited knowledge we have of micro-organisms, exact or final definition is not possible, and that all our observations can only be of tentative value. Dr. ADAMI'S contribution, however, will prove useful, especially to those who wish to obtain a rapid and comprehensive view of the subject. His list of references is exceedingly full and will help workers to economise considerably, both as regards time and trouble.

Annotations.

"No quid nimis."

A PROFESSORIAL UNIVERSITY FOR LONDON.

WHEN Professor Karl Pearson first launched his scheme for founding in London a University in which the professors were to have a predominant power, and into which existing institutions of academic rank in London were to be absorbed, we pointed out that such an ideal University could not possibly be founded in London, inasmuch as the present University, the teaching colleges and the medical schools would take no part in its formation, but would use every endeavour in opposition thereto for the protection of their own interests and trust funds. We also clearly showed that a "federated" University was much more feasible, and our preference for the Gresham Charter arose from its being based on the principle of such a federation. We were much surprised when in June last we received a long list of eminent names supporting Professor Pearson's scheme for promoting a professorial University. But we now find that this is all a mistake. Whilst Professor Pearson meant one thing by a professorial University Professor Huxley and the rest of the Executive Committee of the Association (of whom three are Fellows of the Senate and another is the Assistant Registrar of the existing University of London) meant something quite different. From a recent correspondence in *The Times* we learn that Professor Pearson has resigned the secretaryship of the committee because that body is conferring in some way with a committee of the Senate of the University of London, which is apparently engaged in drawing up another "further revised" scheme to be placed before the Royal Commission. By supporting a new scheme of the Senate which Professor Pearson evidently thinks will be the outcome of such a conference, the Executive Committee will practically throw all the weight of the Association into the scale in favour of a modification of the existing University rather than endeavour to form a new institution which should absorb all those already at work on higher education in London, which latter plan is, we believe, Professor Pearson's ideal. Hence he separates himself from his former colleagues on the committee, for in his opinion they are not keeping clearly enough in view the professorial as distinguished from the federal University, which is the essential aim of the Association. It will be interesting to notice whether the eminent men who belong to the Association will adhere to the views of its founder or will follow the more practical method on which the committee now seems to be engaged. Professor Huxley's evidence before the Gresham Commission, as given in his draft statement, is entirely in favour of a federated University under the title and prestige of the present University, which is to be reorganised so as to take in the technical schools of theology, law, medicine, engineering &c., as colleges of the University, and is to give those schools power to examine their own students for degrees, under conditions determined jointly by them and the Senate of the University, and this evidence had the "general approval" of the Executive Committee, who apparently paid but little attention to Professor Pearson's protests. We certainly did not understand that these were the views of those who originated the Association for promoting a Professorial University, and we cannot easily read them into the proposals adopted by the Association in June last. Professor Huxley, however, says that it is quite a mistake to suppose, as applied to the University, that "professorial" and "federated" are really opposed, and that what is required for London is a voluntary association for purposes of general government, with the reservation of special interests so as to secure a "federation" of a kind sufficiently close to ensure unification for University purposes. It is evidently very annoying to Professor Huxley to find this federation scheme thrown over by Professor Pearson; but it must be remembered that Professor Pearson started the Association and denominated it one for promoting a *Professorial* University for London, and he did not, we gather, intend that any compromise with existing interests should block the way towards the attainment of his ideal.

MR. GLADSTONE AND LIVERPOOL.

IT is always a source of pleasure to us when Mr. Gladstone leaves the party sphere of discussion and allows himself to take an excursion into other fields of reflection, as he did on Saturday last, when Liverpool enrolled him on the list of her freemen. The changes which have come to pass in his native town within his own memory form a congenial theme for any orator. It is not the least illustration of Mr. Gladstone's greatness that he can expatiate on all these changes—on the replacement of sandy beaches and wild flowers by dingy additions to the town and the replacement of a comparatively clear atmosphere by a pall of smoke—and yet conclude by finding material of hope and of ever-brightening prospects for a community whose social and sanitary affairs have often been the concern of moralists and sanitarians. Most men over eighty visiting the scenes of their boyhood where their ancestors had played a distinguished part would be apt to feel some moody sentiments and to moralise on the changes and chances of this mortal life; but there was no such note in Mr. Gladstone's speech, and, liberal and prosperous as Liverpool in the past had been, he anticipated, in spite of all changes, that she would be greater in the future than either her present self or any of her rivals. There was, indeed, one word of shame and grief over the drunkenness of the land, nowhere, perhaps, more to be lamented than at Liverpool, and we must believe that the use of such words by Mr. Gladstone in his present position was neither casual nor insignificant. It is gratifying to know that much high and satisfactory work is being done in Liverpool both by municipal authorities and by personal and religious effort to improve the people of that great city, which represents our contact with the new civilisation of the West. From a sanitary point of view it is clear that such work is being rewarded. We have only to look at the last report of the medical officer of health for the City and Port to see that an impression has been made and is yearly more and more being made on the diseases which have long testified so graphically to the degraded and cramped condition in which the majority of the people have lived in the second greatest city of the kingdom. It would be poor satisfaction, according to Mr. Gladstone's estimate, for Liverpool to go on adding dock to dock and street to street unless she can show corresponding improvement in the state of her poor. The first conditions of such improvement now exist. Her medical officer can lay his hand on every street, and on every house in every street, that supplies the diseases that imply poverty and misery so deep that they can only be reached by special measures of help and rescue. Liverpool still shares the unenviable distinction of being the most densely populated community in the United Kingdom. She still squeezes 99·3 people into an acre, while Glasgow only compresses 92·8 and London 56·5, and she still has 5·67 persons in a house, as compared with 6·1 persons sixty years ago. She is, however, demolishing houses unfit for human habitation at the rate of nearly 500 a year. The deaths from zymotic disease for last year were the lowest recorded. The deaths from fever last year, in its large sense of continued fever, were 131; whereas the average of the preceding ten years was 270. There is—and this is one of the most hopeful facts—a steady decrease of deaths below the

age of five years. Corresponding with this is the large decrease in deaths from diarrhœa—mostly an infantile disease. There is a great fall in the deaths from tuberculous disease. Every house from which fever cases or diarrhœa cases proceed unduly is marked and known to the medical officer and his staff. These are the first drops of a shower of benefactions that will fall on not only the poor of a great city, but on its municipal and its social leaders, when they come to perform the duty which Mr. Gladstone so eloquently enforced—namely, that of attending not only to the promotion of the increase of material wealth, but of all that elevates human nature and human life.

PREVENTION OF LEAD POISONING AMONGST GLASS POLISHERS.

LEAD POISONING amongst glass polishers due to the tin putty employed may, according to M. Guéroult, be entirely abolished by a new plan which has for the last eighteen months been adopted at the Baccarat Glass Works. The old tin putty that was used was a stannate of lead which was manufactured in special furnaces by oxidising three parts of lead with one part of tin. In the new material two parts of metastannic acid are added for each part of putty, the lead being reduced to about a third of the old proportion. Under the former system numbers of workmen suffered from lead paralysis, and many had to leave the works entirely. Since the introduction of the metastannic acid putty, however, not a single case of lead poisoning has occurred.

THE THIRSK RAILWAY ACCIDENT.

THE trial for manslaughter of James Holmes, the signalman whose forgetfulness produced the lamentable railway accident at Thirsk, has resulted in a verdict of guilty, the only verdict possible in the circumstances of the case; but the Court, taking a merciful view of the offence, has released its prisoner upon his binding himself to come up for judgment if called upon, thus in effect waiving punishment altogether. This result is one with which the public may, we think, be very well content, so far as it goes. That Holmes was in fault there can be no doubt; it is equally clear that his fault was a very grave one. But even grave faults do not of necessity call for punishment, and the present is eminently a case in which the exercise of clemency is to be approved. The case has, by reason of the magnitude of the calamity involved, been made the subject of much discussion, and the infliction of exemplary punishment could not heighten the effect which has already been produced. On the other hand, it is abundantly clear that the unhappy man himself, on whom the chief responsibility for this disaster rests, is only in a very limited sense chargeable with what has happened. He was at the time of the accident suffering from the effects of grief, anxiety and broken rest, and certainly not in a condition to do himself justice in the discharge of his work. It is easy after the event to perceive that he would have been wise to press his demand for exemption from duty on this particular night, a demand which it now appears would have been conceded had it been urged. But he did not appreciate how much below par he had fallen, and it can hardly be reckoned a shortcoming that he should be slow to acknowledge even to himself that he was unfit for work. When to these extenuating circumstances is added the fact that his behaviour since the calamity has been open to no reproach it will, we think, appear that this is one of those rare cases in which a crime has been committed by a man in no sense criminal. The exoneration of the signalman from so much blame involves, however, a careful consideration of the system under which the work of the signal-box is carried on. We do not now refer to the perennial subject of protracted hours of labour. The present does not seem to be a case of that sort, for although Holmes appears to have suffered, as we have already said, from broken rest, his vigils were occasioned, not by official duty, but by domestic complications. Against such a contingency no conceivable system of distribution of work can possibly provide. But what does strike us is that no passenger traffic ought nowadays to be carried on save upon an efficient system of interlocking points. If the levers in this cabin had been so connected together that it would be impossible to move them in mistaken order, the signalman's lapse of memory would have been at once corrected when he came to manipulate the points, and no more serious consequences could have ensued than a little delay of the traffic. The Board of Trade has, by persistent work during the past ten years, done much to improve the rolling stock, and especially the brake equipment, on our various railways. We hope that it will now turn its attention seriously to this no less important point of the proper organisation of systems of interlocking the signal levers.

THE MEDICAL AID ASSOCIATION QUESTION AND THE PRESS.

JUDGING from the many notices of this subject in the press, it seems to be recognised as one of importance not only to the public, but to the profession. On the whole, the notices are in a tone of which the profession has no reason to complain. The *Weekly Budget* says: "Of all classes of unionists the doctors are least liable to have to encounter a lock-out." "The doctors" have never had reason to complain of being locked out, but of having been the least paid and the most tardily paid profession—a body of men who are supposed to be at the beck and call of everybody night and day *for nothing*, or for the meanest sums. The profession is the last one that is likely "to strike"; but that is only a strong reason why its relations to the public should be well considered.

THE PREVALENCE OF SMALL-POX.

THE small-pox epidemic at Warrington is, we trust, on the highway towards abatement. In the week ending Nov. 12th no less than seventy-six fresh attacks were notified, in the two next weeks the numbers were thirty-two and twenty-four respectively, and in the week ending the 3rd inst. the new cases were thirty in number. During the last three weeks an immense amount of revaccination has been carried out, some 8000 persons having submitted to the operation; and concurrently with this the number of fresh attacks has diminished until now it is hoped that there will be no need to provide a third small-pox hospital. Amongst measures of prevention which have been urged on the local authorities has been the closure of the elementary schools. Mr. Gornall, the health officer, however, at once set his face against this. Not only would school closure, in his opinion, have led the children to mingle more freely than ever with persons living in and coming from infected houses, but he was able to point out that whereas in pre-vaccination days there was a special excess of small-pox in young children, these have shown themselves in this epidemic to be a class which has been remarkably exempt from the disease. In short, young children still retain the protective influence of a comparatively recent vaccination, and with it they exhibit a corresponding immunity from small-pox. The Royal Commission on Vaccination have, as we noted last week, appointed Dr. Savill to inquire into the circumstances of this epidemic, and we shall therefore later on possess an authoritative account of the progress of the outbreak and be enabled to judge how far its apparent increase owing to aggregation of the sick in hospital and the apparent connexion of its abatement with a period of increased vaccination are borne out by the actual facts. Thus far it is estimated that the cost of the epidemic to the town has been not less than £5000, and at

the same time trade has been most seriously hindered. From St. Helens we hear of ten cases of small-pox; the disease has again broken out in the Dewsbury district, both Dewsbury borough and the towns of Heckmondwike, Batley and Soothill Nether being attacked. Amongst other localities where the disease has appeared or is still maintained are Brighouse, Lightcliffe, Stockport, Rotherham, Wakefield, Lancaster, Manchester, Oldham, Chadderton, Birkenhead, Ashton-under-Lyne, Keighley, Halifax, Bradford, Derby (where four attacks occurred last week), Brierfield, Hipperholme, Thrintoft and Brompton near Northallerton, Enderby near Leicester (where a navvy from a lodging-house has been placed in a tent), Dronfield, Kinsley in the Hemsworth rural district, Liverpool and Manchester. In Manchester only two fresh attacks occurred last week; in Leicester there was one case; in Liverpool the new cases were eight and five respectively in the last two weeks. At Lightcliffe the disease, according to a resolution of indignant ratepayers, "rages in the district," and efforts are being made to arrange for the isolation of the sick in the Brighouse district, although the Lightcliffe people refused to join Brighouse in making hospital provision. In connexion with the prevalence in Islington it is stated that small-pox has broken out in Pentonville prison. Two fatal attacks occurred in London last week. The disease has also appeared north of the border. In Glasgow between thirty and forty small-pox patients are under treatment in the Belvidere Hospital; from Edinburgh only a single case is as yet recorded. The wide diffusion of the disease to which we have for some weeks past drawn attention cannot fail to be a source of considerable anxiety at this very ominous season of the year, and it remains to be seen how far our improved means for promptly hearing of first attacks, taken together with the increasing efforts on the part of the inhabitants to secure the earliest possible isolation of the patients suffering from the disease, will go towards counteracting the mischief that has been wrought by people who, vaccinated themselves, endeavour to persuade other persons not to secure for themselves or their children the same measure of protection.

HEREDITARY ATAXY.

IN the last number of *Brain* Dr. Sanger Brown of Chicago has described a series of cases of extreme interest. The series comprises in all twenty-one cases spread over four generations. Of these twenty-one six have been under Dr. Sanger Brown's observation for several months and two have been examined and reported on by Dr. Norman Bridge. In summarising the results of his examination and investigation Dr. Brown found that, as we have said, the disease was traceable through several generations. He also found that it increased in extent and intensity in the later generations, tending in them to occur earlier in life and to advance more rapidly. It occurred most frequently between the ages of sixteen and thirty-five, but it began in one case as early as eleven and in another as late as forty-five. No obvious preference for sex was manifested, but it descended through females more frequently than through males. No marked influence of any exciting cause could be demonstrated, although in some cases a fall or an injury preceded the onset of symptoms. Any depressing condition also, such as lactation or pregnancy, seemed to produce a rapid advance in the symptoms. There was considerable incoördination of the voluntary muscles when the disease was well established. This was evident first in the legs, but later might extend to the arms, face, eyes, head and articulatory apparatus. Sometimes this tendency was first manifested in the arms, sometimes in the articulatory apparatus. The ataxy was often extreme before the power of walking was lost, but it was not increased by closing the eyes, and the sense of posture was perfect. Although there might be weakness of the legs in the advanced condition there was no muscular atrophy, and in some patients there was permanent spastic contraction. In well-marked cases there were extensive choreiform movements, occurring in the hands, legs or head whenever an attempt was made to maintain the parts in a fixed position. These movements ceased during sleep. There was usually some ptosis and at times transient diplopia in the early stages, the result of weakness of the external rectus. There was no nystagmus, but optic atrophy was an early and constant symptom. The response of the pupil to light and during accommodation was sluggish. It was present, however, so long as the atrophy was not complete. The articulation was markedly disturbed, and in some instances there was a tendency for liquids to enter the larynx. In some cases only—in those in which spontaneous pains in the legs coexisted—the sphincters were slightly affected. The knee-jerk was invariably exaggerated; ankle clonus was frequent. The cutaneous reflexes were also exaggerated (this was especially the case in the early stages); they frequently declined considerably when the disease was far advanced. There was no talipes or other deformity, excepting rarely permanent spastic contractions of the legs in advanced cases. Such is the summary which Dr. Brown gives of his cases, and it will be evident that they form an extremely interesting group. They differ in many material points from ordinary cases of the hereditary ataxy described by Friedreich, notably in the condition of the reflexes; but whether the symptoms in those cases are to be ascribed to a similar underlying pathological condition it is impossible to say. In a critical note on the paper Dr. Ormerod directs attention to the cases recently described by Nonne (which closely resemble Dr. Brown's), in one of which a necropsy revealed no degeneration of tracts in the spinal cord, but a marked diminution in the size of the cerebrum, cerebellum, pons, medulla and cord, and an excess in the numbers of the fine nerve fibres in the spinal nerve roots. A case under Menzel closely resembling these is also referred to, in which at the necropsy this diminutive condition of the nerve centres was found to coexist with degeneration in the posterior columns and pyramidal tracts of the cord; and it is noteworthy that the same condition has been found post mortem in Friedreich's ataxy. Professor Bernhardt also criticises Dr. Sanger Brown's cases, and agrees with Dr. Ormerod, and indeed with Dr. Sanger Brown himself, in believing that in a strictly systematic sense the cases do not belong to Friedreich's type, although they would certainly be placed in a category of hereditary or generic ataxy. To every neurologist the cases are of the utmost interest, and Dr. Sanger Brown is to be congratulated on his good fortune in meeting with them as well as upon the care and thoroughness with which he has investigated their condition.

SEPARATED MILK.

THE grievance brought to the notice of the President of the Board of Agriculture and to the Parliamentary Secretary of the Local Government Board by a deputation from the Central Association of Dairy Farmers last week is an obvious one. It appears that a large quantity of "separated" milk comes to London for the purpose of being mixed with new milk, the mixture being sold as genuine at a lower price than actually genuine milk could be supplied for. Honest dairymen therefore laboured under considerable disadvantage, and they asked the Board of Agriculture to help them by law or by regulation, so that such a mixture should be sold for what it really was. The reasonableness of this request must be admitted, and was admitted by Mr. Herbert Gardner and Sir Walter Foster; but the difficulties in the way of legislation upon this matter are not inconsiderable. Until a definite standard with regard to the quality of milk is decided upon it is not clear as to how this state of things is to be remedied. There are

poor milks and there are rich milks, the former being as genuine as the latter. Public analysts are therefore compelled to adopt a low standard or else run the risk of very occasionally prosecuting—in the event of the milk being genuine, although of wretched quality—an honest dealer. On the other hand, it is equally clear that rich milk may be diluted down to the poor standard and yet be regarded as genuine. This applies to the fat of milk as well as to the non-fatty matters. In view of the fact that the low limit adopted by some analysts is only approached in some few cases, as shown by the figures of an enormous number of analyses, it seems to us not unreasonable to suggest that the Act should only countenance the sale of milk of good average quality. It is well known that poor milk is in most instances yielded by ill-fed and ill-conditioned cows—and this is a point which should be considered. If, at any rate a cow does yield milk of poor quality under normal conditions, such milk should be mixed with the rich and healthy product of other cows.

THE DENTAL HOSPITAL OF LONDON.

THE annual dinner of this institution was held last week under the presidency of Sir Richard Quain. The large number of distinguished guests present and the keen interest shown by all in the welfare of the hospital and school, must have brought to the minds of many, perhaps more especially old students, the days not far distant when their quarters were in a small private house in the south-west corner of Soho-square, with but five or six chairs in the badly lighted stopping-room. The first move was to a large, specially constructed building in Leicester-square, which quickly had to be supplemented by the addition of a new wing; the later increase in staff, with afternoon admission of patients, and the establishment of a department for the supply of artificial dentures to the necessitous poor, will also be recalled to mind. It would, however, appear that the demand for dental operations and for scientific teaching necessitates the erection of a larger hospital. This is estimated to cost about £40,000, of which £3000 have already been promised by the staff and two or three friends interested in the hospital. If success in the past is a guarantee of success in the future, this sum should be quickly subscribed.

PROFESSIONAL OVERCROWDING.

NOWADAYS, and in every calling, we are liable to be constantly reminded that the ranks of workers are becoming inconveniently overcrowded. The statement has no doubt some foundation in fact, and it is one which conveys a very practical meaning to members of our own profession, which is at no time so overpaid that it can bear a lavish distribution of its emoluments. Fortunately the assertion admits of qualification. A comparison of medical practice in various large centres of industry, including the metropolis itself, has shown that the total number of resident practitioners has not grown in proportion to the increase of the general population. Overcrowding has in this case a relative rather than an absolute meaning. The number of workers is not disproportionate, yet work and incomes alike tend rather to restriction than to excess. We must therefore look to other causes than mere congestion within the profession itself to account for this fact. Among these we should probably include the development of specialism. Sufferers who would in a past generation have sought counsel of their nearest medical neighbour flock in crowds to some one or two who are supposed to hold the key to their constitutional secrets. The profession as a whole must lose in proportion, and often by no means justly. Another prime cause is to be found in the competition of hospitals. The abuse of charity evident for some time past in many such institutions has latterly undergone, it is true, considerable abatement under the exercise of stricter methods of inspection, so that some relief of professional over-pressure may be looked for in this direction. Clubs and dispensaries again exert a similar but an even more deleterious influence. They are, as a rule, far too little subject to regulation as to the status of patients admitted to the charitable relief—for it is nothing else—which they afford. More than this, they are often administered, if not owned, by medical men themselves engaged in family practice, who for the sake of some supposed profit, either in means or in reputation, connive at impositions by well-to-do persons which are under any circumstances absolutely disgraceful. Such are some of the influences at work in every considerable centre of population, which, in spite of a correct statistical relation between the number of practitioners and of the local population, maintain a state which virtually tends to overcrowd and to starve out the former. We need hardly point out the fact that the true remedy for such conditions is to be found not among the regulations of licensing bodies or local authorities, but in the self-respecting decision of medical practitioners themselves.

IS SCARLET FEVER A BOVINE MALADY?

PRINCIPAL MCCALL of the Veterinary College, Glasgow, answers this question in the negative. In a recent address he analysed the evidence in the famous Hendon case of 1885, and in a more recent epidemic in Glasgow, due to the distribution of milk from two farms a few miles to the south of the city. In the latter case it was shown that the eruption on the cow's teats, to which the epidemic had been traced by some, had been present for twenty-four days, during which time the milk had been consumed by those on the farms and by the public in Glasgow without the production of scarlet fever, and as scarlet fever has a short incubative stage, it is clear that the cow's affection could not have been of that nature. Those who had become inoculated from the cow's teats also showed no signs of fever or eruption. Twenty-four days after the cow's teats were known to be affected a farmer's boy was seized with scarlet fever, which, however, was prevalent in two adjoining villages, and immediately afterwards the disease appeared in Glasgow in connexion with this particular milk-supply. Of course the milk-supply was stopped, and justly so; but, as Professor McCall points out, it is a serious matter to the farmer to cast to the dogs the milk of fifty-three cows. He suggests that dairy farmers should form a benefit society, with medical, veterinary and law officers, and that vendors of milk in the city should create a similar society.

PARALYSIS AFTER PNEUMONIA.

VARIOUS forms of paralysis have been described as occurring after a croupous pneumonia, but the complication is decidedly rare. Dr. Boulloche[1] has studied several such cases, which he divides into two groups, according as they occur early in the course of the primary disease or do not appear until the later stages.[2] Most of the former group are of a hemiplegic type; in rarer instances the paralysis is confined to a single extremity or region of the body. It occurred both in old and young people, appearing either after the physical signs and symptoms of pneumonia were fully developed, or completely masking the lung affection, so that the true state of affairs could only be discovered on post-mortem examination. This was particularly the case with old people in whom paralysis followed pneumonia, and was the more remarkable in that no local lesion could be discovered to account for the hemiplegia, as in seven out of seventeen cases which Dr. Boulloche found recorded in medical literature. The only pathological condition which could be detected in the brain after death in such cases was an atheromatous condition of the

[1] Thèse de Paris, 1892.
[2] Paralysies précoces et paralysies tardives.

vessels in the Sylvian fissure. The prognosis of this hemiplegic condition depends upon the age of the patient. In advanced life it is almost always fatal, but in young adults the outlook is much more favourable. The hemiplegia is often accompanied by aphasia, but as a rule it is transitory and recovery is rapid. In some of the fatal cases meningitis extending over the cerebrum was frequently met with, occasionally together, with softening of the cerebral substance from atheroma of the vessels. The second form of paralysis in connexion with pneumonia (paralysies pneumoniques tardives) does not appear until the convalescent period of the disease, and in the majority of instances not until the patient is almost well. One case, which occurred in a patient under the care of Professor Rendu, is recorded in detail. The symptoms closely resembled those of diphtheritic paralysis, paralysis of the palate and extremities, paresis of accommodation, loss of tendon reflexes, atrophy of muscles, reaction of degeneration, sensory disturbances; all these symptoms improved after three months and the patient finally recovered. As a rule, the paralytic symptoms appear about the tenth or twentieth day. Sensation is but slightly affected. The paresis affects the lower extremities more than the upper; sometimes the soft palate is also attacked, but the sphincters remain free. The pathological conditions which are the cause of this complication are uncertain, but the close analogy which they bear to diphtheritic paralysis would seem to indicate that a "toxic neuritis" is produced. The prognosis is almost always a favourable one. In a few cases after the appearance of the usual symptoms multiple sclerosis, meningo-myelitis, or a general weakness of the nervous system remained.

ENTERIC FEVER AT RUNCORN.

THE Runcorn Improvement Commissioners have thanked their health officer, Mr. F. McDougall, for his interesting report on enteric fever. With such action we have but to express concurrence, still we trust that something more than the thanks reported by the local press have followed the receipt of such a report. Mr. McDougall tells of widespread fever and of conditions which are an obvious cause of nuisance and disease, and he adds that these conditions, notably those attaching to the storage of huge quantities of filth and excreta near houses and schools, are due to a want of proper building by-laws. In a town like Runcorn a very strict limitation should be placed on the capacity of all filth receptacles, and the scavenging organised by the authority should be such as to prevent the need of anything but small receptacles for filth and refuse. There are now model by-laws dealing with all such matters, and authorities who have brought under their notice the fact that so fatal a disease as enteric fever is due to their failure to make proper by-laws incur a very grave responsibility unless they deal with the matter effectually and promptly.

ALCOHOL AND ACETIC ACID OBTAINED FROM PAPER.

IT is quite within the bounds of possibility, as every chemist knows, to convert, by a series of simple chemical operations, an old linen shirt into sugar and alcohol. By merely immersing linen in cold, strong sulphuric acid, the cellulin $C_6H_{10}O_5$ of which it is mainly composed gradually dissolves and, assimilating one molecule of water H_2O, resolves itself into glucose $C_6H_{12}O_6$. The glucose so formed may be recovered by neutralising the excess of acid with chalk, and from the product so obtained alcohol may be prepared by the ordinary process of fermentation. According to recent researches, acetic acid, too, can also be produced from similar materials—as, for example, paper pulp, Esparto grass &c., all of which contain cellulin. The process, although apparently so simple, is somewhat different in detail. By digesting any of the above substances, or, indeed, starch, sugar or other carbo-hydrates with alkali, such as caustic soda, a salt of the alkali, acetate of soda is formed. This can easily be recovered, and the product on distillation with sulphuric acid could be made to yield pure acetic acid, which it is well known is the acid of ordinary vinegar, in which it occurs to the extent of 3 to 4 per cent. Moreover, acetic acid $C_2H_4O_2$ being an oxidation product of alcohol C_2H_6O, it is possible by means of a reducing agent (a mixture evolving hydrogen) to convert it once more into alcohol. This conversion is only of theoretical interest, however, and of no practical value. Messrs. Cross and Bevan, who read a paper on this interesting action of alkali upon cellulin bodies at a meeting of the Society of Chemical Industry last Monday, attached some importance to the process, as in all probability by its agency paper-makers might be in a position in the future to recover from their waste materials a product (acetate of soda) of value in certain industrial processes. Apart, however, from the possible practical value of these results, they are calculated to throw a new light upon the nature and constitution of that important cluster of bodies known as the carbo-hydrates.

THE CARDIAC GANGLIA IN ENDOCARDITIS.

DR. DMITRI KUZNETSOFF (St. Petersburg Military Medical Academy Dissertations, 1891-92, No. 70) has examined microscopically the nerve ganglia of the heart in twenty-three cases of acute and subacute endocarditis, comparing them with five control cases, and finds that the endothelial layer of the capsules of the ganglia is affected, the cells multiplying and swelling so as to form granulations. The changes in the nerve ganglion situated in the lower portion of the inner auricular septum are mainly due to the extension of the vascular granulation-forming process from the valves to the adipose tissue surrounding the ganglia. He has not found vacuolisation of the ganglia, and he could not in general make out any connexion between changes in the muscular structure of the heart and in the ganglia.

DISTRIBUTION OF SENSORY DISTURBANCES.

THIS was the subject of a paper of much interest read before the Neurological Society of London by Dr. Henry Head, at its meeting on Nov. 17th. He set himself to show that the pain of visceral disease is distributed over definite regions, and is frequently associated with cutaneous tenderness. This tenderness reveals certain areas which correspond with those over which herpes zoster is distributed, and numerous graphic records of cases of herpes were shown, as well as diagrams in which the painful areas were indicated, bearing out this statement. It was also stated that each organ is definitely associated with a certain root area or with several areas, and when all the areas found to be tender in consequence of visceral disease are placed together on a chart of the body two gaps are seen, one on the arm and the other on the front of the leg or thigh. By tracing those tender areas to their origin in the cord, a means is found for indicating the segment of the cord from which the organ receives its sensory supply, and thus the course of the sympathetic fibres to the various organs can be mapped out. In this manner it is found that sensory sympathetic fibres arise from the first dorsal to the first lumbar roots inclusive; that no visceral fibres are given off from the second, third and fourth lumbar, and that again visceral fibres come off from the fifth lumbar and the first, second, third and fourth sacral. The fifth sacral and the coccygeal give no visceral fibres. Various conditions are referred to as altering the resistance of the nervous system, such as anæmia, pyrexia &c., so that localised pain or tenderness may become generalised. The sensory disturbances in hysteria were also referred to, and two varieties were distinguished—a cerebro-spinal and a psychical. The scope of the paper included a

discussion of several relative problems, for which there was not sufficient time. By common consent it was agreed that the subject was of such interest and the observations were so important that a profitable discussion of them in their various relations could only be undertaken when the members had had an opportunity of studying the views brought forward, and the evidence for them, when these were published. An adjourned meeting for the discussion is to be held, subsequently to which we hope to deal fully with the views which the paper embodies.

VILLAGE SANITATION.

MR. GEORGE DE'ATH of Buckingham is an ardent advocate of village sanitation; and as the result of the experience he has acquired both as to the sanitary circumstances of villages in his own county and as to the almost impossible task of securing for them proper sewerage, together with adequate water-supply, cleansing, control of buildings &c., he comes to the conclusion that a supervision of rural districts ought to be maintained by non-local medical inspectors connected with the central authority, that further powers of compulsion must be exercised and that the incidence of rating for sanitary purposes ought to be put on a more satisfactory footing. He also urges the necessity of means of adequate isolation of the sick and of institutions at certain central points where bacteriological and other similar work needed for purposes of diagnosis and of the adoption of successful preventive measures could be performed for the local health officers.

LARGE TUMOUR OF THE FRONTAL LOBE.

IN a recent number of the *Medical News* (Philadelphia), Dr. Morrison gives a description of the case of a patient, first seen in 1886, when he was suffering from vague pains in the head, which were ascribed to syphilitic meningitis, and were relieved by iodide of potassium. Dr. Morrison lost sight of him and never saw him again until two days before his death in December, 1891. In the interval he had been in various hands, and had been in the Pennsylvania Hospital for a period of six weeks. From the somewhat fragmentary history it seems that in the summer of 1888 he had an epileptiform convulsion, and that the pains in the head returned with increased severity. They were worse on stooping. In August, 1889, he gave up his work, and about this time it was noticed that his speech was slower than formerly. Soon after leaving work his eyesight began to fail, so that he was unable to recognise persons or objects at some distance. When in the Pennsylvania Hospital he was in a condition of mental hebetude. The tongue was protruded straight and there was no paralysis. He had extensive hæmorrhagic retinitis in both eyes. There was no material change in his condition when he was seen by Dr. Morrison two days before death, except that he was feverish, with injected conjunctivæ and other symptoms of influenza. Next day he became comatose, and died that evening. At the necropsy the dura mater was found to be strongly adherent to the pia mater along each side of the longitudinal fissure. There was a large tumour in the left frontal region attached superficially to the dura mater, and apparently growing from it. This mass had occupied the greater part of the anterior fossa of the skull, and below it had invaded the left half of the cribriform plate of the ethmoid, so that there was a direct communication between the interior of the skull and the nasal cavity. The tumour extended backwards into the frontal lobe two and three-quarter inches. It was not adherent to the brain substance, but had apparently pressed the frontal convolutions backward, and when it had eroded the ethmoid it had apparently also destroyed some central tissue. After preservation in alcohol for five months the weight of the mass was five ounces, and one curious point about it is the fact that there was a small exostosis on the inner aspect of the frontal bone, which formed a distinct indentation in the tumour. There was no evidence on the bone here of any external injury, but it may be that the irritation of the dura at one point by such an exostosis was a very important factor in the production of the growth. The tumour was a spindle-celled sarcoma, but the chief interest of the case lies in the absence of motor symptoms due to the growth—an absence which seems to confirm the current views as to the functions of the frontal lobes.

PROGRESS OF TYPHUS FEVER AT DUNDEE.

THE epidemic of typhus fever at Dundee shows some signs of abatement. In all twenty-eight cases have occurred in twenty-one houses. Of these twenty-one houses, six contain only one room, and thirteen only two. Only one five-roomed house was invaded. Pending fuller data, these facts show clearly the oft-established relationship between typhus fever and cubic space. Though half the cases were school attendants, the Dundee School Board have not agreed to the health officer's suggestion to close the public schools.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

IN drawing the attention of our readers to the meeting of the Metropolitan Hospital Sunday Fund held at the Mansion House on Nov. 25th to consider the report of the Council, we noted that the date of the next annual collection of the fund was fixed for June 11th. We ought also to have stated that Archbishop Vaughan pointed out that, owing to the collection on behalf of schools belonging to the Roman Catholic denomination having been fixed for June 11th, it would be necessary for the Roman Catholic churches to make their Hospital Sunday collection on June 18th.

INFECTIOUS DISEASE AT LEEDS.

THERE are at present ninety cases of scarlet fever and forty-eight of small-pox under isolation at Leeds. Nine cases of the latter disease were removed during the week. It is said that there are a great many private sufferers from both diseases who have not been removed to hospital. Leeds at the present moment is in the unenviable position of being one of the very few large towns in England which has not adopted notification. The occurrences there will, it is hoped, cause an early removal of the stigma.

THE ORIGIN OF HÆMOGLOBIN.

WE look to comparative physiology and histology for much of our information on the origin of the blood-corpuscles, and quite recently considerable light has been shed on the subject by the researches carried on in both the phylogenetic and ontogenetic relations of these corpuscles. In the Transactions of the Canadian Institute for 1891 Dr. A. B. Macallum[1] deals with the question of the origin of hæmoglobin of the fusiform corpuscles and of the hæmatoblasts in the blood of amphibia. Working with lake lizards (Necturus lateralis) and the larvæ of Amblystoma punctatum and examining the blood fresh, or fixed either in the fumes of osmic acid—1 per cent. solution for two hours—or by a saturated solution of corrosive sublimate or picric acid, or by Ehrlich's fluid (the only fixing reagents which he found serviceable), and staining with the various colour reagents usually recommended, he obtained most beautiful preparations, as a result of the study of which he concludes that the hæmoglobin of the blood-corpuscles is derived from the abundant nuclear chromatin of the hæmatoblasts. This chromatin, he considers, is an iron compound, the constant oxidation and reduction of which constitutes the chemical

[1] Studies on the Blood of Amphibia.

process underlying life. The fusiform cells of amphibian blood he maintains are derived from the blood-corpuscles—that they are in fact the remains of the broken up or destroyed red cells, the latter in this conversion losing the cell membrane and the greater portion of the discoplasma. The hæmatoblasts in amblystoma are probably the direct descendants of cells split off from the extreme ventral portions of the visceral mesoblast. Of course the most interesting part of the paper is that dealing with the origin of the hæmoglobin and with the iron in this compound. The importance of the use of freshly prepared ammonium sulphide in aiding in the solution of this question can from Dr. Macallum's evidence scarcely be over-estimated.

HEALTH OFFICERS AND NOTIFIED CASES.

THE function of the health officer with regard to cases notified to him is at all times a delicate one. He is *primâ facie* bound to accept the practitioner's certificate, even though he may know that this is based on incorrect diagnosis. At Megavissey, recently, a practitioner complained to the Local Government Board that the health officer had questioned his diagnosis in two instances of notification of diphtheria. The health officer has explained that he examined one case in his private capacity and the other at the request of the patient. The authority have accepted this explanation. We think it would have been better if the health officer had examined these patients in conjunction with the practitioner who certified. The case also illustrates the disadvantage of health officers being engaged in private practice.

SMALL-POX ISOLATION AND WORKHOUSE INFIRMARIES.

A CASE of small-pox has occurred at Keighley in the person of an inmate of the workhouse infirmary, the disease having been no doubt contracted from a tramp who three weeks ago was taken into the building suffering from small-pox and isolated in a room which communicates with the wards by a passage. At a special meeting of the guardians, and after consultation with the mayor, it was resolved to transfer the small-pox cases to the new model lodging house, which had already received two cases sent by the corporation. The proprietor of the lodging house, however, absolutely refused to receive any more cases, so that the danger of infection to other inmates of the workhouse infirmary remains as serious as before. It is a striking commentary on the ineffective state of sanitary administration and the absolute lack of isolation accommodation. This, too, in a town which rivals Leicester in its disregard of vaccination. An analogous question as to the use of the workhouse infirmary for the reception of cases of small-pox has arisen at Rotherham, where the medical officer has reported the likelihood of the disease spreading among the workhouse inmates. At the meeting of the guardians, when this report was received, it was stated that arrangements were in progress for the erection of an isolation hospital. In truth, the present prevalence of small-pox is doing much to demonstrate the weak points of sanitation in this country.

IS SCURVY A PARASITIC DISEASE?

DR. FREIRE[1] has come to the conclusion that scurvy is a disease probably of a parasitic nature. Having three cases under his charge (mother and two children) he took the opportunity of making the following experiments: After carefully sterilising the gums he drew off a drop of blood and inoculated, amongst other media, a peptone beef gelatine made with saturated solution of common salt; although there was no growth in the ordinary media, in this one, at the end of about six days, there appeared a fine thread or film, almost like a flake of mucus, floating in the semi-fluid gelatine (semi-fluid because of the high temperature at which it was kept). At the end of fifteen days the gelatine was quite liquefied, and there were now numerous colonies of minute micrococci $\frac{1}{7000}$ of a millimetre in diameter, each surrounded by a soft transparent material. This micrococcus was readily stained in fuchsin. Taking into account the fact that the hygienic conditions were bad in the case of the three patients, it can scarcely be maintained that the disease was distinctly infectious or contagious; but the fact that the organism was present in all three cases is interesting as suggesting the infective nature of the disease, and also as affording some evidence as to the cause of certain of the pathological conditions met with in scurvy, notably the hæmorrhages.

[1] Recherches sur la Nature Parasitaire du Scorbut. Rio Janeiro: Imprimerie de Pinheiro et Cie. 1890.

INFECTIOUS DISEASE AND NOTIFICATION AT LEITH.

MEASLES and scarlet fever are unusually rife at Leith. More than two hundred cases of the former disease are occurring weekly in the place and a score or so of the latter. A lively discussion as to the necessity for closing the schools has taken place in the Public Health Committee of the Council, and eventually a negative determination was arrived at. But a still more important question is shortly to be decided by the Town Council, being nothing less than the question of notification. At present a system of voluntary weekly notification is in force, but the Council will resolve at an early date whether the Act of 1889 shall be adopted or not. A sort of *plébiscite* of the medical profession has already been taken by an active journal in Leith. This has resulted in a well-nigh unanimous representation in favour of notification.

CONDITION OF THE BLOOD IN GASTRIC AFFECTIONS.

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process underlying life. The fusiform cells of amphibian blood he maintains are derived from the blood-corpuscles—that they are in fact the remains of the broken up or destroyed red cells, the latter in this conversion losing the cell membrane and the greater portion of the discoplasma. The hæmatoblasts in amblystoma are probably the direct descendants of cells split off from the extreme ventral portions of the visceral mesoblast. Of course the most interesting part of the paper is that dealing with the origin of the hæmoglobin and with the iron in this compound. The importance of the use of freshly prepared ammonium sulphide in aiding in the solution of this question can from Dr. Macallum's evidence scarcely be over-estimated.

HEALTH OFFICERS AND NOTIFIED CASES.

THE function of the health officer with regard to cases notified to him is at all times a delicate one. He is *primâ facie* bound to accept the practitioner's certificate, even though he may know that this is based on incorrect diagnosis. At Megavissey, recently, a practitioner complained to the Local Government Board that the health officer had questioned his diagnosis in two instances of notification of diphtheria. The health officer has explained that he examined one case in his private capacity and the other at the request of the patient. The authority have accepted this explanation. We think it would have been better if the health officer had examined these patients in conjunction with the practitioner who certified. The case also illustrates the disadvantage of health officers being engaged in private practice.

SMALL-POX ISOLATION AND WORKHOUSE INFIRMARIES.

A CASE of small-pox has occurred at Keighley in the person of an inmate of the workhouse infirmary, the disease having been no doubt contracted from a tramp who three weeks ago was taken into the building suffering from small-pox and isolated in a room which communicates with the wards by a passage. At a special meeting of the guardians, and after consultation with the mayor, it was resolved to transfer the small-pox cases to the new model lodging house, which had already received two cases sent by the corporation. The proprietor of the lodging house, however, absolutely refused to receive any more cases, so that the danger of infection to other inmates of the workhouse infirmary remains as serious as before. It is a striking commentary on the ineffective state of sanitary administration and the absolute lack of isolation accommodation. This, too, in a town which rivals Leicester in its disregard of vaccination. An analogous question as to the use of the workhouse infirmary for the reception of cases of small-pox has arisen at Rotherham, where the medical officer has reported the likelihood of the disease spreading among the workhouse inmates. At the meeting of the guardians, when this report was received, it was stated that arrangements were in progress for the erection of an isolation hospital. In truth, the present prevalence of small-pox is doing much to demonstrate the weak points of sanitation in this country.

IS SCURVY A PARASITIC DISEASE?

DR. FREIRE[1] has come to the conclusion that scurvy is a disease probably of a parasitic nature. Having three cases under his charge (mother and two children) he took the opportunity of making the following experiments: After carefully sterilising the gums he drew off a drop of blood and inoculated, amongst other media, a peptone beef gelatine made with saturated solution of common salt; although there was no growth in the ordinary media, in this one, at the end of about six days, there appeared a fine thread or film, almost like a flake of mucus, floating in the semi-fluid gelatine (semi-fluid because of the high temperature at which it was kept). At the end of fifteen days the gelatine was quite liquefied, and there were now numerous colonies of minute micrococci $\frac{1}{5000}$ of a millimetre in diameter, each surrounded by a soft transparent material. This micrococcus was readily stained in fuchsin. Taking into account the fact that the hygienic conditions were bad in the case of the three patients, it can scarcely be maintained that the disease was distinctly infectious or contagious; but the fact that the organism was present in all three cases is interesting as suggesting the infective nature of the disease, and also as affording some evidence as to the cause of certain of the pathological conditions met with in scurvy, notably the hæmorrhages.

[1] Recherches sur la Nature Parasitaire du Scorbut. Rio Janeiro: Imprimerie de Pinheiro et Cie. 1890.

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The pyrexia disappears simultaneously with the fluid. When other serous membranes, as the pericardium or the peritoneum, become affected the salicylate acts in an equally beneficial manner on them in causing the absorption of the effusion. In certain of Professor Edgren's cases, it is true, the drug failed to produce any marked effect either on the effusion or on the temperature, but it is not unlikely that in these cases the pleurisy was really secondary and of tubercular origin, though in other cases of undoubted tubercular pleurisy the salicylate was by no means without effect.

HYDRASTININ.

According to Dr. Faber hydrastinin, when given during labour, though it sets up uterine contractions, does not expedite the expulsion of the child, but rather retards it. The pains, which are of a character similar to those produced by ergot, are sometimes very protracted, lasting in one case for as much as a quarter of an hour. In metrorrhagia, whether due to endometritis, myoma, or tumours in the uterine appendages, hydrastinin has proved valuable, and is best administered hypodermically, the dose being about five centigrammes.

A NEW SUBSTITUTE FOR COCAINE.

The acetamide of eugenol—which is contained in oil of cloves—has recently been prepared; it occurs in crystalline form, and appears to enjoy the property of producing local anæsthesia in a very high degree. It may be used similarly to cocaine for this purpose, and, as it has no caustic action and is an energetic antiseptic, it may be found to be even superior to cocaine for minor operations on the mucous membranes.

THE ALKALOIDS OF COD-LIVER OIL.

According to M. Bouillot, the alkaloids of cod-liver oil, given in quantities of from 2 to 3½ grains during the twenty-four hours, have a distinct diuretic action, increasing not only the quantity of urine, but that of urea. As had previously been stated by MM. Gautier and Mourgues, who studied their effects on animals, M. Bouillot found that they cause a marked increase in intra-organic oxidation, the oxidation of the leucomaines being rendered nearly complete and the toxicity of these bodies being diminished. It therefore appears to him that the alkaloids of cod-liver oil are likely to be of considerable value in therapeutics.

PHARMACOLOGY OF BROMIDE OF ETHYL.

Dr. Ginsburg (St. Petersburg Military Medical Academy Dissertations, 1891–92, No. 111), writing on the pharmacology of bromide of ethyl, states among the results of his numerous experiments on dogs and rabbits that in small doses it increases the irritability of the heart muscle, but in large doses diminishes it; thus in the former case the excito-motor ganglia or accelerator nerves are stimulated, while in the latter the irritability of the heart muscle is lowered and the frequency of its contractions diminished. Bromide of ethyl also lowers the blood pressures, paralysing the peripheral vaso-motor nerves. With large doses the heart takes a share in lowering the blood pressure. The drug does not appear to have any effect on the pneumogastric or on the vaso-dilator nerves, either central or peripheral.

A NOTE ON THE FORTHCOMING CONFERENCE ON CHOLERA IN ST. PETERSBURG.

THE following brief account of the nature and object of the conference on cholera to be held in St. Petersburg towards the end of December may be of interest. The purpose of the conference is to decide on the measures to be adoped to meet the fresh outbreak of the disease that is fully expected to occur next year, more particular attention being paid to the special measures demanded by varying local conditions. With this object a circular letter was addressed on Oct. 30th (Nov. 11th) by the Minister of the Interior to the Governor of each province (or "government") throughout the country, requesting him to select one or two physicians who had had a close personal experience of the epidemic during the past summer to act as members of the conference. The opening meeting will take place on Dec. 13th (25th), and it is expected that the conference will last for from five to seven days. The Ministry has undertaken to bear all the travelling expenses of the members, who will receive a sum of two roubles each per diem for lodgings, and an additional daily payment of three roubles during the time they are in St. Petersburg. In order that the medical men selected may have every means for forming an opinion on the questions to be discussed, the Medical Department of the Ministry has enjoined its local representatives to furnish each member with all the information at their disposal, such as medical reports, bulletins on the course of the epidemic, charts, plans, results of examinations of water and of soil and the administrative and local arrangements made for meeting the epidemic.

The programme of the conference is already in print. It sets forth the points to be discussed in the following order: (*a*) Measures for improving the sanitary condition of inhabited localities: (1) The chief features of localities with water-supply of unsatisfactory quality and the possibility of providing them with harmless water; (2) the nature and means of cleansing cesspools; (3) organisation of the sanitary supervision. (*b*) Measures directed against the introduction of infection and the preliminary arrangements for meeting the forthcoming epidemic: (1) The means of determining the first case of cholera and the organisation for registering the cases and deaths; (2) the means for isolation and carriage of patients; (3) the various systems of supplying medical aid and their relative efficiency in combating the epidemic; (4) the *rôle* of sanitary overseers and the instruction of the inferior members of the service in dealing with the sick and in disinfection; (5) the methods of disinfection that have appeared most suitable and efficient; the disinfection of dejecta, houses, utensils &c.; the cost of disinfection and the possibility of substituting for it destruction (by burning); (6) the means of disposal of refuse and the methods of disinfecting in villages; (7) which is preferable, the removal of the sick to hospital or their isolation at home, where all precautionary measures can be taken?

A second form of considerable interest has been circulated among members of the conference. It contains in full detail the programme of the Government Report on the Epidemic of 1892, which it is hoped will be issued in the course of a few months. The main heads of the report will be the four following:—Preliminary information; the cholera epidemic; the measures for meeting it; and finally, observations bearing on the symptomatology, treatment, etiology and prophylaxis of cholera. The information will further be grouped under a large number of subdivisions, the enumeration of which is sufficient to cover nearly two sides of a foolscap sheet of paper. With the elaborate machinery at the disposal of the Russian Government for obtaining information and statistics from every part of the country the report will, it is expected, be full, thorough and accurate, and its publication will be looked forward to as an event of no little interest and importance.

CHOLERA.

CURRENT NOTES, COMMENTS AND CRITICISM.

WHEN a full account has been rendered of the cholera epidemic of 1892 the results will be so lamentable as to appear little short of appalling. It is difficult at present to estimate the aggregate loss of life it has caused, and to realise all the sickness, misery and destitution it has entailed. The events and figures making up the history of the epidemic, which we have chronicled week by week, in reality fail to represent the facts adequately, much less to afford a true picture of what have been the sufferings of the various populations of the different countries invaded by the disease. Among no people, perhaps, have these been greater than among the Jews in Poland. During the three months that cholera was raging in the Governments of Lubin, Siedlec, and Radow, for example, the death-rate was terrible, and the destitution consequent thereupon calamitous. A correspondent, writing recently in the *Jewish Chronicle*, says that in the case of Lubin 90 per cent. of the victims were Jews who inhabit the unhealthiest quarter of the town. The epidemic has now passed away, but has left terrible traces behind it. Many thousand families are described as being without bread, without a roof, without clothes, and deprived of all means of subsistence. Apart from the effects of the disease, it is to be feared that the application of ill-considered measures for its repression,

and a totally inadequate provision for coping with it, have greatly added to and aggravated the sufferings of the unfortunate people. Death, quarantine, disinfection, stagnation of commerce and suspension of trade have placed the poor in a state of misery which defies description. As so commonly happens it is not exactly known when cholera first appeared in Lubin; but it reached its full intensity about the middle of August. The town has about 40,000 inhabitants. For several weeks the deaths from cholera reached nearly eighty per diem. On the lowest calculation 2500 deaths occurred in August and September, and the disease almost exclusively attacked one portion of the town and a certain class of its proportion. Of the total number of deaths about one-tenth only occurred in the upper town, and this would give for the 15,000 residents in the lower town the proportion of one death in six. At Miedzyrzec, a town of 8000 inhabitants, the mortality from cholera was 300, and at Miechow 350 died out of a population of 2000. The method of procedure adopted at Lublin on the occurrence of a death from cholera was for the police to proceed to the house in which the death occurred and turn all the people out, and place seals upon the doors. They were not allowed to remove any of their clothes or belongings for fear of spreading infection, and were at once transported to large wooden huts erected at some distance from the town without any other sort of provision having been made for them. The starvation, sickness and misery that followed may be readily imagined. A spirit of charity and solidarity, which has always been a distinguishing feature of the Jewish race, was soon manifested by some of the richer Jews, but their efforts and resources in aid of the poorest sufferers are exhausted, and with the presence of winter the prospect is a pitiable one.

There is, happily, but little to chronicle regarding cholera nearer home. According to official reports there were four deaths from that disease in Holland during the past week. A death from cholera is also reported at Brussels. Several cases of choleraic disease are still under treatment at the St. Jean Hospital at Bruges.

Although an occasional case is reported in Hungary and France, cholera—at any rate as an epidemic disease—has disappeared for the present. Several cases have recently occurred in the town and suburbs of Epernay. It is perhaps worthy of note that Epernay is on the line of communication between Paris, the Ardennes, Dinant and Namur. At Dinant it is alleged that there were some cases of cholera last summer, although the fact of their occurrence was skilfully concealed. At Calais some excitement was caused lately among the maritime population by the removal to hospital of five persons, all of one family, who were attacked with choleraic symptoms. In view of its possible return next spring in the province of Saratoff it has been decided by the authorities at St. Petersburg to supplement the staff of the sanitary service by a considerable increase in the number of officials.

According to the latest intelligence the disease has broken out again in a virulent form in several villages of the province of Poltava, and the Russian authorities are continuing to prosecute various measures in anticipation of a recrudescence of cholera in the spring. At the last meeting of the Medical Society Surgeon-Colonel J. B. Hamilton read a paper on the epidemic progress and causation of cholera mainly based upon observations and experience of that disease in India, which led to an interesting debate, an abstract of which is published in our reports of medical societies for this week.

We are glad to notice that at a recent meeting of the London Common Council the exertions of the Port Sanitary Committee and Dr. Collingridge in endeavouring to protect the Port of London against cholera were fully recognised. Dr. Collingridge in particular was indefatigable and rendered very valuable services to the public.

CHOLERA IN FRANCE.

(FROM OUR SPECIAL CORRESPONDENT.)

A VISIT TO HONFLEUR.

The Water Drunk on English Ships.—The High Death-rate.—Cholera Patients and Rum.—Chaos in Sanitation.

THERE is no regular water-supply at Honfleur. A number of springs exist within the town and some at a little distance from it. The public derive their water from these springs, but some of the fountains were constructed so long ago that all record has been lost. There is the water, but even the town authorities are unable to say whence it comes. There are five principal springs, and the one that supplies the shipping with water is known as the Source St. Leonard. This spring is somewhere on the inland side of the old St. Leonard Church and the theatre. The church has a fine portal, built in the sixteenth century, but underneath the water has formed a small subterranean lake which renders the church so damp that the ornamental painting has been spoilt. It is supposed that the water comes from the hill Côté Vassal, which is about seventy metres high and is close at hand. Red flint, a little clay and iron and a large quantity of lime compose the soil of this hill. The rain falling on the surface of the hill dries very quickly and helps to form the St. Leonard spring, but no one knows where this spring is situated. The fountain, however, which gives the water is by the church, but on the other side, so that the water has to pass under the church before it reaches the fountain. This fountain is in the very centre and low-lying part of the town and is surrounded by public washing tanks. Here dirty linen is daily washed, and there is no saying to what extent the splashing of the dirty water may filter through the earth into the drinking water below. Apart from this, before reaching the fountain the water could be contaminated by filth from the numerous surrounding houses. Samples of the water have recently been sent to Paris for bacteriological examination. From this fountain near the St. Leonard Church, pipes convey a portion of the water to a little fountain on the quays near to the mooring station of the Newhaven boats, and it is from this secondary fountain that the sailors usually take their supply to fill the tanks on board the English ships. May not the bringing of such water into English ports be far more dangerous than the arrival of travellers from abroad?

There have been twenty cases of cholera at Honfleur, most of them occurring at the end of August and during the month of September, in the Hochas and St. Nichol quarters. In the latter district there is an important public fountain. The water comes through some very old pipes, partly made of wood and tarred over. These pipes are supposed to be from 200 to 300 metres long, but they are so ancient that nobody can tell in what direction they are laid or where the spring is that fills them with water. To find out it would be necessary to dig up several streets. On one occasion, for instance, a house near the port was flooded. The cellars were full of water and no one could imagine whence it came. At last it was noticed that a fountain some distance off, and near the chief post-office, did not run as plentifully as usual. An investigation was made, with the result that a broken pipe was discovered; and when this was mended the cellar was no longer flooded. The water had passed under two streets and two blocks of houses to reach this cellar. The higher districts of the town have no fountains. All the pumps or fountains or springs are in the low-lying portion of Honfleur—that is to say, precisely where the water is most exposed to the danger of contamination. Where there are pipes the water is not under pressure. The pipes often leak and, as there is no pressure from within, foul water can enter the leaking pipes from without.

If the water was derived from the subsoil of a perfectly clean, well-drained and healthy town there would be less fear of contamination; but, as already stated, Honfleur is an exceptionally unhealthy and dirty place. Fortunately there are only 9726 inhabitants; but in the last ten years the deaths were not far short of a third of the population. There were from 1882 to 1891 no less than 2901 deaths, of which 1456 were of persons under twenty years of age. The irregularity in the annual number of deaths suggests the frequent occurrence of epidemic disease. The deaths for each of the ten years mentioned were, in due order, as follows:—347, 301, 252, 275, 329, 283, 326, 334, 222 and 332. Allowing for fluctuations of the population, this gives a death-rate of 29 to 30 per 1000 per annum. When it is considered that the population is less than 10,000, that the town is swept by fresh sea breezes, is beautifully situated and has every facility for good sanitation, such a death-rate can scarcely be described as otherwise than preventable. A few elementary measures of hygiene would in all probability reduce the death-rate by one-half.

Not only is there no regular water-supply at Honfleur, but there is also no drainage system. A few sewers exist here and there, but no one knows exactly where they are or how many there may be. There is no plan of the drainage or of

the water-supply; in fact, the question seems to be entirely ignored. In most of the houses there are pails, and there is a contractor who undertakes to empty these pails once a month, if paid 12s. a year. But a very large number of the inhabitants object to pay the 12s. They simply carry their pails downstairs themselves and empty the contents into the port amidst the shipping. The water thus polluted is then used to wash the decks &c. of the ships. Of course the principal sewers also fall into the port, and still further help to corrupt the water in which the ships float while they are loading butter and poultry, fruit and eggs for the British market. There is no law compelling the householders to empty their pails or *tinettes*. They may or may not employ the contractor, just as they think fit; the pails may remain in the house and overflow with filth just as the people choose. The idea of enforcing cleanliness does not seem to have dawned upon the authorities. Even when the contractor does come to remove the contents of the pails or of such cesspools as exist he sometimes employs a tub cart which leaks, and thus befouls the streets through which it passes. In many houses there is neither closet, cesspool nor pail, but everything is simply emptied into the gutter in front of the door. This is often done in broad daylight in the principal streets, and before numbers of people. From the gutter this filth, in the course of time, finds its way to such sewers as exist, and at the sewer mouth mixes with the offal from butchers' shops. These sewer mouths are so badly constructed that they get choked up and occasion vile odours. When, as the result of a storm or some special rush of water, the sewer mouth is cleared, the filth travels slowly down to the port. The pneumatic system of emptying cesspools is not applied, nor is any attempt made to burn the foul gases that escape from the cesspools. By the side of these cesspools—and no serious measures are taken to prevent the cesspools from leaking—may often be found a spring of water. Apart from the public fountains, a great number of persons have springs in their own gardens and drink the water. There are, in fact, springs of water in all directions, every one of them more or less exposed to contamination, and everybody is allowed to drink what water he pleases without any regard to the danger incurred.

The western portion of the town faces a long beach, where an embankment could be easily constructed to hold the tide in check and a fine site could be thus created either for building purposes or for an esplanade and pleasure grounds. At present, however, this beach has been converted into a wilderness covered with the refuse of the town. Here is thrown the "soft core" and the "hard core" from the street sweeping. Here are to be found ankle-deep—sometimes knee-deep—such refuse as bottles, broken crockery, tins, dirty straw, dead animals, shrimp skins, fish bones and offal, cabbage stumps, household refuse of every description, and an enormous amount of apple refuse from which the juice has been extracted to make cider. To keep all this moist, to ensure its active fermentation, all along the remains of what used to be the city sea wall there are large numbers of drains or small sewers pouring forth slop-water, urine and fæcal matter. The pure sea breezes that should give health and vigour to the inhabitants of Honfleur pass over this festering mass of decomposing organic matter before they reach the town. It is said that some orders have been issued forbidding the throwing of refuse on this beach. If so, the orders were given out only as a matter of form; they are in no wise observed. I have been the whole length of this beach; every obnoxious article mentioned I have seen; and while I was on the spot some carts with refuse came and unloaded on the beach in my presence.

The first case of cholera occurred on Aug. 27th. A man who had been to Havre was taken ill very suddenly and died as he was being conveyed to the hospital. Dr. Massard, the "doctor for epidemics," being fully aware of the insanitary condition of Honfleur, and fearing that the epidemic would spread very rapidly in such a town, adopted the most rigorous and extreme measures possible. He caused everything belonging to the victim to be at once burnt; his clothes even, and his furniture, were destroyed by fire; then he gave orders that the passenger boat from Havre should be thoroughly disinfected. It was forbidden to bring over fresh vegetables from Havre, and no dirty linen was allowed on shore from the Havre boats. Nevertheless, other cases occurred at Honfleur; eighteen patients were treated for cholera at the hospital and nine died. The deaths were very sudden, accompanied with all the symptoms of Asiatic cholera, notably what Dr. Massard described as the blue or "toad skin." The patients for the most part came from poor quarters of the town; but there are other quarters of Honfleur, even more poor and more insanitary, where no cases of cholera occurred. Most of the patients were known to be drunkards, yet, much to his surprise, Dr. Massard noticed that when ill they manifested a strong repugnance for the rum that was prescribed. On the other hand, the patients who were not drunkards took the rum given to them without any difficulty. Apart from cholera, typhoid fever is now prevalent at Honfleur, and at all times there has been a great deal of fever of a malarial type, necessitating a large consumption of quinine.

In spite of all these facts it is said that Honfleur is too poor to attempt any sanitary improvements. The timber trade is gradually leaving the town, and many Scandinavian ships now go to Dieppe, Havre and Rouen. One large timber-sawing factory has been closed, and this means a decrease in the municipal receipts of £720 per annum out of a total of £5500. Yet in spite of this the Municipality has recently constructed a huge new dock, which in face of the decreasing trade was quite unnecessary. Had the financial liabilities incurred for this new dock been contracted for purposes of providing a good water-supply and good sewers the town would soon have acquired a better reputation, and this would have materially helped to bring the trade back. At about four miles' distance from the town an ample supply of pure water could be obtained and delivered at Honfleur under pressure. The cost of the works necessary is estimated at £20,000; but the Municipality does not seem to understand the importance of such an undertaking. In spite of the high death-rate an impression prevails that Honfleur is a very healthy place. Notwithstanding the efforts of a few local reformers—notably Dr. Rachet, who is a municipal councillor, and Dr. Massard, who as "doctor of epidemics" represents the central government—nothing will be done unless strong outside pressure is brought to bear. This might be achieved, on the one hand, by the French Minister of the Interior and, on the other hand, by the English shipping companies, who so largely contribute to maintain the trade of the port.

LEPROSY IN BRITISH GUIANA.

THE experience of Dr. Barnes, as medical superintendent of the public leper asylums of British Guiana, does not lead him to regard leprosy as contagious—at least under ordinary conditions. In the "British Guiana Medical Annual and Hospital Reports," just published, he says:—"At the Public Lunatic Asylum there have been for many years several lepers living in a ward in association with other patients and no spread has occurred. Similarly, at the Trinidad and our own leper asylums no healthy person employed as nurse, doctor, or in any capacity has ever developed the disease. Further, upon taking charge of the leper asylums I found at Gorchum a dozen children, varying in age up to fifteen years, quite free from signs of the disease, although born of diseased parents and living with and as lepers. I may also mention particularly the case of a man employed for twelve years in washing the inmates' clothes at Mahaica. He is still quite healthy. The asylum at Molde, founded over 150 years ago, shows the same state of affairs. No doctor or nurse has ever developed leprosy. Doctors and trained nurses should enjoy perhaps some immunity, as they may be expected to be cleanly in their habits; but this factor scarcely exists among the employés at our own asylum, their ablutions being confined chiefly to a careless rinse with a few ounces of water."

Dr. Barnes is opposed to the compulsory segregation of lepers, thinking that the stamping out of the disease may be expected to be accomplished by the elevation of the people. As regards treatment he does not believe there is any specific; the chief thing is to make the leper take care of himself. If he leads a quiet, steady life, avoids burning or cutting himself, and cleanses any ulcer that may form, resting the hand or foot on which it is, he may look for a comparatively comfortable existence. In some cases of leprotic fever, however, Dr. Barnes has seen salicylate of soda act like a charm. In operations on lepers he has found hæmorrhage to be slight, contrary to the experience of some other writers. Dr. Beaven Rake's plan of

cutting through perforating ulcers he considers the best treatment for such cases. As to the question of heredity he says: "In spite of the habitual denial of hereditary taint amongst the creoles, I have been told by some of the old inmates of the asylums that almost all the creole inmates have or have had relatives who were leprous. This I intend to work out, as fully as possible, to verify or disprove the assertion. My own experience shows that the more I learn of the family history of the inmates the more hereditary taint is revealed. Amongst the general population of the colony hereditary influence is held with at least as great tenacity as is contagion. I know that it is frequently sufficient to frustrate projected marriages even amongst the educated classes. Of course, the occurrence of the disease amongst several members of a family might arise as well from contagion as from hereditary influence."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Lanark County.—Dr. James M'Lintock has submitted to this County Council just such a report as is wanted as the first of a series of annual reports. It takes up under a series of headings all the points which are needed in order to serve as a basis of future action. Whether statistics or physical conditions of the district are concerned; whether the different circumstances as to sewerage, water-supply and disposal of excreta are in question; or whether the more incidental considerations such as hospital accommodation, river pollution, inspection of trades, dairies &c. are involved: all these various matters are dealt with in so far as their bearing on public health is concerned. There is plenty of sanitary work to do in the county, and Dr. M'Lintock is fully conversant with both the existing state of affairs and with the lines on which work should be carried out in the future. His report deserves wide circulation throughout the county.

Woolwich Urban District.—This extra-metropolitan district had in 1891 a gross death-rate of 22·4 per 1000 and a zymotic rate of 2·8 per 1000, the latter rate being mainly the result of deaths from whooping-cough, measles and diarrhœa. In this connexion Dr. W. R. Smith urges that measles should be added to the list of notifiable diseases and that he should thus have an additional means of taking steps to prevent the attendance at elementary schools of children coming from houses in which that disease exists. He at the same time points out that the notification of erysipelas is without apparent benefit. No less than some 5000 cases of this affection were notified in London last year, and the Local Government Board hold that it is of such concern to lying-in women, to vaccinated infants and to persons requiring surgical operations that they cannot take steps to remove it from the Notification Act. House-to-house inspection is progressing in Woolwich, and some action is being taken as regards the housing of the working classes. But Dr. Smith states that the condition of the houses in Woolwich is one that causes him considerable and continuing anxiety, more particularly in view of the mortality returns from phthisis and allied disorders.

Blackpool Urban District.—Dr. A. J. Anderson gives the corrected death-rate for 1891 as 18·2 per 1000, and he at the same time points out that owing to the sudden influx of visitors of all classes the population, on which the rates are calculated, run risks quite in excess of that commonly attaching to places of a like number of inhabitants. The infant mortality remains very high—namely, 181·9 per 1000 births, although there was no summer diarrhœa due to excess of temperature. The heavy rate of deaths amongst infants is largely set down to neglect amongst mothers, who have to look after visitors rather than care for and suckle their babies. After discussing the working of the system of compulsory notification, Dr. Anderson reports on the opening of the new isolation hospital on July 7th. The old sanatorium received 11 patients in the first six months of the year; the new one received 51 in the second half of the year. The increase since July may have more than one explanation, but it is noteworthy in connexion with the provision of a proper instead of a very unsatisfactory hospital. House-to-house inspection has now been maintained for four years, and much good has resulted. Details of the work are given, and it is clear that the accumulated results must be beneficial to the town and increase its prosperity.

St. Helens Urban District.—The annual rate of mortality was, last year, above the average, and this was mainly due to influenza; but the excess of deaths maintained in St. Helens and the failure to secure a more substantial abatement in its average are remarkable. Mr. M'Nicoll gives the rate for 1892 as 25·4 per 1000. Infant death is great in amount, and the mean zymotic rate is high. The latter is due to ignorance and carelessness, and to the breeding grounds of disease which are maintained in the borough by reason of its deep and filthy middensteads. The various causes of disease are discussed at some length, and then a description is given of the sanitary work of the year. Some really important work has been carried out, notably the construction of a new intercepting sewer; houses unfit for habitation have in some cases been dealt with, and a decision has been come to not to take a retrograde step which would involve relapse as regards refuse removal, merely on the score of expense. During the year eighty-nine patients were admitted into the isolation hospital, the largest number of admissions being cases of enteric fever. It is satisfactory to note that an assistant medical officer of health has been appointed, the holder of the new office being Dr. John Robertson of Edinburgh; and Mr. M'Nicoll testifies that his labours are already telling forcibly on the sanitary organisation of the town.

Wem Rural District.—Mr. Cecil A. Corke gives an account of the measures adopted in face of an epidemic of measles. He found that the mere exclusion of scholars from infected houses served no sufficient purpose, but when school-closure was resorted to the prevalence became controlled. The authorities of Sunday and other voluntary schools consented to act in concert with the elementary schools as to closing; but Mr. Corke considers that the power to close such schools should go hand in hand with that exercisable over the public elementary schools. The death-rate during the year was 16·9 per thousand; a new cemetery site has been decided on; care has been bestowed on water supplies, and nuisance inspection has been maintained. But the district needs some means of hospital isolation and the compulsory notification of infectious diseases ought to be adopted.

Teignmouth Urban District.—Dr. Cecil Piggott, after discussing the meteorology of 1891, explains that the corrected death-rate for the year was 17·7 per 1000 and that the zymotic rate was very low. The causes of death are considered in the report, and the subject of the etiology of influenza is entered into in some detail. The local medical profession have strongly pressed on the authority the need for an isolation hospital, and this attitude receives Dr. Piggott's support. Indeed, a place like Teignmouth, professing to be a health resort, has a duty in respect to the isolation of first cases of infectious diseases quite in excess of that of other sanitary districts which make no such profession. Evidently excellent work by way of systematic inspection is in progress, house drains seem to be effectually tested and remedies are applied where needed. The water-supply ought to be a constant one and surface wells need to be abolished. On the whole, the report tells of good work well sustained throughout the year.

Isle of Wight Rural District.—Dr. Joseph Groves once more gives a very complete report on the greater part of this island, a district to which many look with interest. Last year the general death-rate was 16·5 and the zymotic rate was 1·6 per 1000. In dealing with the infectious diseases each parish is separately considered, and credit is given to the notification system for supplying valuable information. No means of isolation have been provided, but since the issue of the report some preliminary measures have been taken which may result in action as to this important matter. By-laws and questions of scavenging have been considered at length, but decided action is still awaited. There is also need of a better provision of water, the more especially because in some well-known localities which are frequented by visitors shallow and polluted wells exist, and ill-kept rainwater is still resorted to. This subject is dealt with at considerable length by Dr. Groves, and the sanitary authority can certainly not complain that they have not received full information as to the places where action is needed. Much the same may be said as to defects of sewers and drainage. Indeed, we are forcibly struck with the fact that whilst detailed information has again and again been supplied to this authority as to the lines on which effective sanitary administration should proceed, so little is done to remedy defects that ought to be obvious to all. Difficulties must be admitted to exist,

especially as to water-supply; but the account of the sanitary state of the contributory places of this otherwise attractive rural area is by no means pleasant reading; and it ought to call forth much more energy than has yet been apparent on the part of the authority.

Bradford Urban District.—The vital statistics of this important borough are discussed at some length by Dr. Arnold Evans, who records the general death rate for 1891 as 22·0 and the zymotic rate as 2·3 per 1000 living, whilst the infant mortality was at the rate of 181 per 1000 registered births. Whooping-cough, scarlet fever, and diarrhœa were the largest contributors to the zymotic death-rate. Of scarlet fever 1163 cases were notified, this being a larger number than in any year since 1887. Of the 1163 cases, 780 or 67 per cent. were isolated in hospital. Of typhoid fever 157 case were notified, a number which has remained fairly constant for some years past. But it is clear that notification is utilised to get rid of the conditions with which this disease is commonly associated, and hence diminution may ultimately be expected. The fatal attacks of this disease during the year were under the average. Perhaps one of the most interesting parts of the report is a description of a hospital for small-pox, in which all outgoing air passes through a furnace. Dr. Barry, of the Local Government Board, has visited the institution, and has made experiments as to the germ-destroying properties which it is said to ensure. An official report on this inquiry may be expected, and we trust that it will not be delayed since the matter is one of great importance to sanitary authorities generally. There is much in Dr. Evans's report that we must pass over. But we cannot conclude without saying that in style, matter, and utility it is an excellent document.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6005 births and 3680 deaths were registered during the week ending Dec. 3rd. The annual rate of mortality in these towns, which had been 18·6 and 18·9 per 1000 in the preceding two weeks, declined again to 18·8 last week. In London the rate was 17·7 per 1000, while it averaged 19·6 in the thirty-two provincial towns. The lowest rates in these towns were 10·3 in Birkenhead, 13·0 in Halifax, 14·0 in Huddersfield and 15·2 in Bradford; the highest rates were 25·1 in Brighton, 25·7 in Salford, 27·5 in Hull and 28·7 in Bolton. The 3680 deaths included 429 which were referred to the principal zymotic diseases, against 392 and 424 in the preceding two weeks; of these, 150 resulted from measles, 70 from scarlet fever, 60 from diphtheria, 56 from whooping-cough, 45 from "fever" (principally enteric), 44 from diarrhœa and 4 from small-pox. No fatal case of any of these diseases occurred last week in Wolverhampton or in Derby; in the other towns they caused the lowest death-rates in Oldham, Huddersfield and Halifax, and the highest rates in Manchester, Bolton, Brighton and Salford. The greatest mortality from measles occurred in Manchester, Cardiff, Bolton, Croydon, Salford, Hull and Brighton; from scarlet fever in Salford, Cardiff, Sunderland, Bolton and Plymouth; from whooping-cough in Norwich, Manchester, Salford, Birmingham and Bolton; from "fever" in Swansea; and from diarrhœa in Plymouth and Burnley. The 60 deaths from diphtheria included 39 in London, 6 in Manchester, 2 in West Ham, 2 in Salford and 2 in Sheffield. Two fatal cases of small-pox were registered in London, one in Liverpool and one in Sheffield, but not one in any other of the thirty-three large towns; 19 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and one in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 3882, against 4063, 4045 and 3945 on the preceding three Saturdays; 302 new cases were admitted during the week, against 404 and 303 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 340 and 353 in the preceding two weeks, declined again to 343 last week, and were 92 below the corrected average. The causes of 67, or 1·8 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Bolton, Oldham, Sunderland, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Salford, and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the preceding three weeks from 20·6 to 23·7 per 1000, further rose to 24·2 during the week ending Dec. 3rd, and exceeded by 5·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·3 in Paisley and 17·1 in Dundee to 27·7 in Aberdeen and in Edinburgh, and 58·7 in Leith. The 673 deaths in these towns included 112 which were referred to measles, 16 to scarlet fever, 12 to whooping-cough, 9 to diarrhœa, 7 to "fever," 2 to diphtheria, and not one to small-pox. In all, 158 deaths resulted from these principal zymotic diseases, against 127 and 162 in the preceding two weeks. These 158 deaths were equal to an annual rate of 5·7 per 1000, which exceeded by 3·5 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had increased from 61 to 104 in the preceding three weeks, further rose to 112 last week, of which 39 occurred in Leith, 36 in Edinburgh, 18 in Aberdeen, and 16 in Glasgow. The deaths referred to scarlet fever, which had risen from 13 to 28 in the preceding four weeks, declined again last week to 16, and included 6 in Glasgow, 3 in Leith, and 3 in Greenock. The 12 fatal cases of whooping-cough showed a further increase upon recent weekly numbers, and included 11 in Glasgow. The deaths referred to different forms of "fever," which had been 11 and 4 in the preceding two weeks, rose again to 7 last week, of which 3 occurred in Leith and 2 in Dundee. The deaths from diseases of the respiratory organs, which had been 137 and 141 in the preceding two weeks, declined to 134 last week, and was 197 below the number in the corresponding week of last year, when influenza was prevalent. The causes of 86, or nearly 13 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 and 22·8 per 1000 in the preceding two weeks, rose again to 23·3 during the week ending Dec. 3rd. During the past nine weeks of the current quarter the death-rate in the city averaged 23·1 per 1000, the rate for the same period being 17·8 in London and 22·6 in Edinburgh. The 156 deaths in Dublin during the week under notice exceeded by 3 the number in the preceding week, and included 6 which were referred to "fever," 2 to diarrhœa, one to scarlet fever, and not one either to small-pox, measles, diphtheria, or whooping-cough. In all, 9 deaths resulted from these principal zymotic diseases, equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 1·7 in London and 7·9 in Edinburgh. The deaths referred to different forms of "fever," which had been 2 and 4 in the preceding two weeks, further rose to 6 last week. The 2 fatal cases of diarrhœa corresponded with the number in the preceding week. The death from scarlet fever was the first fatal case of this disease recorded during the past four weeks. The 156 deaths registered in Dublin last week included 44 of infants under one year of age and 33 of persons aged upwards of sixty years; the deaths of infants considerably exceeded those recorded in any recent week, while those of elderly persons showed a marked decline. Four inquest cases and 4 deaths from violence were registered; and 45, or more than a fourth, of the deaths occurred in public institutions. The causes of 30, or nearly 25 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF MEDICAL STAFF.

SURGEON-COLONEL CHURCHILL has arrived from India and assumed Administrative Charge of Woolwich. Brigade-Surgeon-Lieutenant-Colonel Evatt has been posted to Woolwich for duty. Brigade-Surgeon-Lieutenant-Colonel McWalters and Surgeon-Captain Miles have arrived from India in the *Malabar* on completion of their tour of service. Surgeon-Lieutenant-Colonel Gabbett has taken over Charge

of the Women and Children's Hospital at Colchester. Surgeon-Captains Reilly and McDowell have embarked in the *Euphrates* for service in India. Surgeon-Captain O'Brien has been transferred to Armagh and Surgeon-Major Smythe to Cahir.

ARMY MEDICAL STAFF.

Surgeon-Lieutenant-Colonel Poole Robert Gabbett, from the Seconded List, to be Surgeon-Lieutenant-Colonel (dated Nov. 28th, 1892).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Chas. Elliott Leopold Barton Hudson, Middlesex Yeomanry (Duke of Cambridge's Hussars), to be Surgeon-Lieutenant (dated Dec. 7th, 1892).

INDIAN MEDICAL SERVICE.

The undermentioned Medical Officers of the Indian Medical Service have been posted to General duty, Poona district:—Surgeon-Lieutenants F. E. Swinton, S. H. Burnett, and T. Jackson. The following appointments have been made:—23rd (2nd Battalion Rifle Regiment) Bombay Infantry, Surgeon-Lieutenant W. C. Sprague, to officiate in Medical Charge, vice Surgeon-Captain Wm. Jennings, transferred to the Civil Department for temporary employment. The services of Surgeon-Captain C. H. L. Palk, I.M.S., have been placed temporarily at the disposal of the Government of India. The services of Surgeon-Colonel J. Richardson, M.B., Officiating Surgeon-General and Sanitary Commissioner with the Government of India, have been placed at the disposal of the Government of the New Provinces and Oudh. Surgeon-Colonel J. G. Pilcher, Officiating Inspector-General of Civil Hospitals, North-West Provinces and Oudh, has been appointed to officiate as Inspector of Civil Hospitals, Bengal. The services of Surgeon-Captain W. Vost, M.B., I.M.S., Bengal, have been placed at the disposal of the P. W. Department, and the services of Surgeon-Captain P. W. O'Gorman, I.M.S., Bengal, have been placed temporarily at the disposal of the Government of Bengal. The services of temporary Uncovenanted Medical Officer H. A. McLeod have been placed at the disposal of the Chief Commissioner of Assam. The following appointments of the Army Medical Staff are announced:—Brigade-Surgeon-Lieutenant-Colonel R. P. Ferguson, Army Medical Staff, has been appointed to the Administrative Medical Staff of the Bengal Command, to be Principal Medical Officer, Allahabad District, vice Surgeon-Colonel F. W. Wade, transferred to the Home Establishment. Surgeon-Colonel C. H. Y. Godwin, having been appointed to the Administrative Medical Staff of the Bengal Command, to be Principal Medical Officer, Rawalpindi District, vice Surgeon-Colonel A. Allan, deceased. Brigade-Surgeon-Lieutenant-Colonel F. B. Scott, M.D., C.M.G., having been appointed—in anticipation of promotion—to the Administrative Medical Staff of the Bengal Command, to be Principal Medical Officer, Quetta District, vice Surgeon-Colonel W. Graves, transferred. Under instructions from the Horse Guards, Surgeon-Colonel F. W. Wade, Brigade-Surgeon-Lieutenant-Colonel A. F. Churchill, M.B., and Surgeon-Captain T. Rudd, M.D., have been directed to proceed to England in anticipation of promotion.

NAVAL MEDICAL SERVICE.

The following appointments have been made:—Fleet Surgeons: W. Graham to the Pembroke Dockyard and J. L. Sweetnam to the *Inflexible;* Staff Surgeons Horace X. Browne to the *Phœbe* and Thomas M. Sibbald to the *Calypso;* Surgeon H. W. G. Green to the *Bellerophon.*

THE VOLUNTEER OFFICERS' DECORATION.

This decoration has been further conferred upon the undermentioned officers:—*Western District:* 1st Devonshire (Western Division, Royal Artillery), Surgeon-Lieutenant-Colonel John Steele Perkins and Veterinary Lieutenant James Heath; 1st Glamorganshire, Surgeon-Lieutenant-Colonel Charles Pegge; 1st Gloucestershire, Surgeon-Lieutenant-Colonel Francis P. Lansdowne; 2nd (Prince of Wales's) Volunteer Battalion, the Devonshire Regiment, Surgeon-Major (ranking as Lieutenant-Colonel) John Henry S. May, retired; 4th Volunteer Battalion, the Devonshire Regiment, Surgeon-Lieut.-Colonel Joseph Harper; 2nd Volunteer Battalion, the Prince Albert's (Somersetshire Light Infantry), Surgeon-Lieutenant-Colonel Edward Liddon, M.D.; 3rd Volunteer Battalion, Surgeon-Lieutenant-Colonel Wm. Harford Glover Phelps, M.D., and Surgeon and Honorary Surgeon-Major Henry William Livett, retired; 1st (Brecknockshire) Volunteer Battalion, the South Wales Borderers, Surgeon and Honorary Surgeon-Major Jas. Williams, retired; 1st (City of Bristol) Volunteer Battalion, the Gloucester Regiment, Surgeon-Major (ranking as Lieutenant-Colonel) George M. Stansfeld, retired; 1st Volunteer Battalion, the Duke of Cornwall's Light Infantry, Surgeon-Captain (Honorary Surgeon-Major) Richard Charles Mason Pooley; 1st (Pembrokeshire) Volunteer Battalion, the Welsh Regiment, Surgeon-Major George Griffith and Surgeon-Lieutenant-Colonel Edward P. Phillips, retired; 3rd Glamorgan, Lieutenant-Colonel James Griffith Hall.—*Home District:* 2nd Middlesex, Surgeon-Lieutenant-Colonel John Wickham Barnes and Surgeon-Lieutenant-Colonel Thos. Thyne, M.D. 3rd Middlesex, Surgeon-Major John Cook, M.D.—*Royal Engineers:* 1st London, Surgeon-Lieutenant Richd. Buswell; 1st Middlesex, Surgeon-Lieutenant-Colonel Matthew Baines, M.D.; 1st Surrey (South London), Surgeon-Captain Charles Swaby Smith; 2nd Volunteer Battalion, the Oxfordshire Light Infantry, Surgeon and Honorary Surgeon-Major Edwd. Law Hussey, retired; 1st Bucks, Brigade Surgeon-Lieutenant-Colonel William James Shone; 1st Volunteer Battalion, Princess Charlotte of Wales's (Royal Berkshire Regiment), Surgeon and Honorary Surgeon-Major James Ellison, M.D., retired; 2nd Volunteer Battalion, the Duke of Cambridge's Own (Middlesex Regiment), Surgeon and Honorory Surgeon-Major John Prince, retired; 1st Middlesex (Victoria and St. George's), Surgeon and Surgeon-Major (ranking as Lieutenant-Colonel) William Geo. Shepherd, M.D., retired; 4th Middlesex, Brigade-Surgeon-Lieutenant-Colonel Andw. Clark; 12th Middlesex (Civil Service), Surgeon and Honorary Surgeon-Major Henry Spencer Smith, retired; 13th Middlesex (Queen's Westminster), Surgeon and Honorary Surgeon-Major Robert Cross, retired; 3rd London, Surgeon and Honorary Surgeon-Major Charles Hy. Bennett, M.D., retired; 14th Middlesex (Inns of Court), Surgeon and Honorary Surgeon-Major Alfred Cooper, retired; 15th Middlesex (the Customs and Docks), Surgeon-Lieutenant-Colonel Frederick William Humphreys, Surgeon-Lieutenant-Colonel Robert Gordon Tatham and Surgeon-Major (ranking as Lieutenant-Colonel) Walter Dickson, M.D., retired; 19th Middlesex (St. Giles's and St. George's, Bloomsbury), Surgeon-Lieutenant-Colonel Henry Reynolds Myers and Acting Surgeon William Gill, retired.—*Volunteer Medical Staff Corps* (London Companies): Surgeon-Lieutenant-Colonel Commandant Arthur Trehern Norton, Surgeon-Lieutenant-Colonel William Henry Platt and Surgeon-Captain (Honorary Surgeon-Major) John Adam Watson.

RETIREMENTS IN THE MEDICAL STAFF.

There has not been a very active run of promotion of late in the army medical staff, and it is perfectly natural that any measures likely to retard it should be unpopular and that the Army List ought to be often scanned, especially towards the close of the year, to see what the prospects are in this respect. In the ensuing year there will be five retirements on account of age in the administrative ranks of the medical staff.

SOLDIERS AND TOBACCO.

Sir Evelyn Wood says, in a recent report on the Aldershot manœuvres, that there was less smoking in the ranks on the line of march than in the previous year, with the resulting advantage that fewer men fell out. He appears to be in favour of regulating the quality as well as the quantity of tobacco smoked by the soldier. By far the larger number of soldiers in all armies smoke. During the Franco-German war one of the first things the German soldiers sought was tobacco. The loss of his pipe is keenly felt as a real deprivation by the military and civilian smoker alike, and there is no gift more valued by the inmate of a workhouse or a lunatic asylum than tobacco. Without entering into the *pros* and *cons* of the tobacco controversy it cannot be doubted that the immoderate use of the strong kind of tobacco which soldiers affect is often very injurious to them, especially to very young soldiers. It renders them nervous and shaky, gives rise to palpitation, and is a factor in the production of the irritable or so-called "trotting heart," and tends to impair the appetite and digestion. It would be a great point gained if soldiers could be induced to smoke some of the milder kinds of tobacco, and we do not see why these should not be sold in canteens. The soldier unfortunately prefers the strongest, because it is cheaper, inasmuch as a small quantity produces an effect that would only result from the consumption of a much larger quantity of any of the milder kinds. On active service it would be a good plan for the Government to supply the soldier with tobacco of the latter sort either as a free issue or at a trifling charge.

THE SOLDIERS' MESSING.

We are very glad to hear that means have been taken for spreading a practical knowledge of the new method of military cooking among the regiments and depôts quartered at various stations by sending the superintendent of the Army School of Cooking at Aldershot to inspect their cook-houses and appliances and to afford practical instruction in the Aldershot system, which is said to have given such general satisfaction at that camp.

SICKNESS AMONG THE TROOPS IN NORTHERN INDIA.

We have already alluded to the prevalence of sickness among the troops at Peshawar and to the removal of one regiment, the Royal Welsh Fusiliers, to Nowshera, about twenty-eight miles distant. Cherat, the nearest hill station to Peshawar, is also occupied by half a regiment from that garrison. At this season and during the autumn months Peshawar is frequently—we may say usually—unhealthy from the prevalence of a bad form of malarious fever. Removal from the Peshawar valley is often the only reliable remedy; quinine and other drugs are of little or no avail as long as the affected men remain in the district. The Northumberland Fusiliers relieves the Royal Welsh Fusiliers at Peshawar, and the Royal Scots Fusiliers will be railed from that station to join the camp of exercise at Rawal Pindi.

ROYAL VICTORIA HOSPITAL, NETLEY.

Lord Sandhurst, Under Secretary of State for War, accompanied by his private secretary, visited the Royal Victoria Hospital last week, and went over the buildings and grounds with the principal medical officer of the district.

THE WOUNDS CAUSED BY SMALL-BORE BULLETS.

Our service contemporary, the *Army and Navy Gazette* of last week, published a communication from Veterinary-Captain Smith, the late professor of the Army Veterinary School, detailing the results of further experiments with the Lee-Metford bullet on the bones of the horse at ranges fixed at every hundred yards—from 100 to 1000 yards. These results are apparently mainly determined by differences in the strength and resistant powers of the substance and structural arrangement of the bone at the part struck. From 50 to 200 yards the effect is pulverising and destructive; but from 300 to 1000 yards the effect is different, according to the part of the bone hit—that is to say, whether it be the dense resistant substance of the shaft or the cancellous spongy structure of the ends of the bone. In the former case, the shaft of the bone is shattered and fissured in all directions with much loss of substance, and it makes but little difference as regards the destructive effect whether the bullet be fired at 50 or 1000 yards. In the latter case, the bullet may only give rise to a hole in the spongy cancellous structure of the extremities of the bone struck, which is sometimes perfectly clean, but frequently fissured, the fissures extending or not into the joint. If the extremity of the bone, as in the case of some of the bones of the extremities of a horse, consists more of compact than spongy structure, then the pulverising effect is produced and no clean hole is made.

THE REMOVAL OF ST. GEORGE'S BARRACKS.

According to a contemporary St. George's Barracks, Trafalgar-square, are to disappear, and the Guards from these barracks are to have new quarters built for them at Millbank. We presume that the building now appropriated for recruiting purposes at St. George's Barracks and approached from the back of the square, will also disappear, and it is quite time that it did so, for the very inferior accommodation afforded for recruiting is not by any means of a creditable character. It seems to us that smart, airy and clean-looking rooms or offices, of a more attractive kind than the old buildings, are required for this purpose, and they should be in prominent positions and not hidden away in a sort of cul-de-sac or at the end of a back street.

ROYAL MILITARY COLLEGE EXAMINATION.

The candidates for the competitive examination for Sandhurst have been exceptionally numerous on this occasion and gave full occupation to the medical officers responsible for their preliminary physical examination. The candidates are stated to have numbered about 300 altogether, and as the cadetships to be competed for only amount to about 120, the competition will be severe.

PRACTICAL HINTS FOR LADY TRAVELLERS TO INDIA.

We have received copy of a small pamphlet published by Mr. Stanford of Cockspur-street, on "How to Pack, How to Dress, and How to Keep Well on a Winter Tour in India." Its author is the Hon. Mrs. Neville Lyttleton, and it sets forth various details in these directions which are likely to prove useful to ladies embarking for India. Its price is one shilling, and if the information contains nothing particularly new, it is of a ready practical kind and supplies hints and suggestions in regard to various points that might otherwise fail to be remembered.

Correspondence.

"Audi alteram partem."

"ABDOMINAL SECTION IN CERTAIN CASES OF PELVIC PERITONITIS."

To the Editors of THE LANCET.

SIRS,—Although present at the adjourned discussion at the Obstetrical Society on Dr. Cullingworth's paper I was not prepared then to express an opinion on the many issues raised, but trust that the importance of the matters in dispute may be a sufficient excuse for trespassing on your valuable space in the form of a letter. Personally I think the title of the paper was unfortunate, grouping as it did several classes of pelvic disease, which, whether diagnosed before or after operation, ought to have been classified under their distinctive headings. Had Dr. Cullingworth instead confined his paper to the frequent connexion which exists between inflammatory disease of the uterine appendages and pelvic peritonitis, giving at the same time his views as to the value of abdominal section in those cases alone, a less discursive but much more valuable discussion would have been the result. At the present moment the treatment of the above class of diseases may with fairness be called the burning question of the day in gynæcological circles; and the reduction to plain well-defined lines of their therapeusis would be conferring a real benefit upon the profession at large. Some of the speakers seemed to look upon appendageal disease as a comparatively trifling malady, and one which usually occasional rest, assisted by nature, would cure.

No doubt a large number of these cases do get well under non-operative treatment, but not such as those described in Dr. Cullingworth's paper, where the evidences of disease were unmistakable and the lives of the patients imperilled by the recurrent attacks of pelvic peritonitis. It is the so-styled conservative treatment of such cases which is directly responsible for incomplete operations and great mortality. Anyone who has had much experience of this kind of operative work must have been compelled at times to stay his hand by reason of the extent and intimacy of visceral adhesions; and yet, in the face of this, which is common experience, we are asked to believe that abdominal section is indicated rarely only as a *dernier ressort*. That these neglected cases kill is indisputable, although frequently the death certificate is differently worded. They are fertile producers of intestinal obstruction, of septicæmia and general peritonitis, and, short of these, are responsible for more invalidism in women than probably any other form of disease. Much in the course of the debate was made of Dr. Cullingworth's mortality, and Dr. Williams went so far as to say that the death-rate of the series—viz, 18 per cent.—was not higher than that throughout the country in this class of case, with a few exceptions. If so, it would be deterrent, but it is far from the truth, as was abundantly proved by Dr. Cullingworth himself when speaking of his latest cases and others. Out of my last fifty cases I have lost two patients; although in no case has an operation been done without a clear history of recurrent inflammation, objective signs of appendageal disease and, unless in cases urgently demanding operative relief, treatment for a sufficient period by rest. This seems to me the truly conservative treatment and that which is in accordance with the teachings of modern surgery, and Dr. Cullingworth is to be congratulated in having the courage to express so unequivocally his opinions.

I am, Sirs, yours faithfully,

Nottingham, Nov. 6th, 1892. GEORGE ELDER, M.D. Glas.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—Having had the advantage of being a pupil of the late Sir James Syme in the Edinburgh Royal Infirmary, and having administered chloroform to some of his operation cases, I may perhaps be allowed to sound a forgotten or neglected note in the admirable rules for chloroformisation which he always laid down, and to which I have always strictly adhered, without ever meeting with a fatal though sometimes with an alarming case in thirty years' practice. The particular detail in the mode of administration to which I refer, and on which Sir James Syme was very emphatic, is that it should never be given on lint, and especially on folded lint. Now, it is a significant fact that amongst recent cases reported in THE LANCET of "deaths under chloroform," in at least two of them the chloroform was administered on folded lint. No further comment is needed.

I am, Sirs, your obedient servant,
WM. ROBINSON HILL, M.D. Edin.

Lymington, Hants, Dec. 5th, 1892.

To the Editors of THE LANCET.

SIRS,—Under the above heading in THE LANCET of Dec. 3rd you publish two letters, the second of which expresses Dr. Van Someren's classification of deaths under the use of chloroform. Curiously enough, the first letter by Dr. Rowland supplies details of a fatal case, showing that the accompanying circumstances were such as Dr. Van Someren advocates; the open method was adopted, and the heart was to all appearance healthy. From Dr. Rowland's account I conclude that death was due to one of two causes: either the reflexes were not abolished, and thus, although the patient was doubtless insensitive to pain, yet the effect of the skin incision was to arrest the heart through reflex irritation of the pneumogastric, the heart's action being already probably embarrassed by the upward pressure of the ascitic fluid; or the patient actually received a poisonous dose of the drug, and its lethal effect on the medulla resulted. That deaths occur with painful regularity under chloroform is apparent, notwithstanding recently expressed opinions of its perfect safety if the respiration solely be attended to. Every anæsthetist is aware that there are certain cases in which it is impossible to administer ether with due regard to the safety of the patient; but that there are numberless instances of chloroformisation in which ether, an undoubtedly generally safer anæsthetic, might have been used is equally true. With the present method of giving gas to start with ether is robbed of many of its defects; and I am of opinion that the annual death roll from anæsthetics would be materially diminished were ether, instead of chloroform, more frequently made use of.

I remain, Sirs, yours obediently,
Old Burlington-street, Dec. 2nd, 1892. PERCY EDGELOW.

"DEATH AFTER VACCINATION."

To the Editors of THE LANCET.

SIRS,—*Apropos* of an annotation which appeared in THE LANCET of last week under the above title, will you allow me space to make a few comments? If the beneficent results of vaccination are to be obtained with the fewest mishaps, surely some further steps should be taken by the authorities to render such lamentable accidents as far as may be impossible. It is important to recognise that, however admirably vaccination may be performed in respect to selection of the lymph and technique of the operation, in a certain proportion of cases in the first eight days or so more or less unusually severe local inflammatory effects will occur, and "rashes" evolve—e.g., various phases of erythema multiforme and urticaria. Such complications, however, are usually manageable, transient and benign, and of no great importance, though naturally distasteful or alarming to the parents. It is after the vaccination has been pronounced successful and the child dismissed, no doubt with admirable advice and instructions for protecting and healing the sores, that real danger is to be apprehended from various infections. There is a certain proportion of mothers to whom it is nearly or quite useless to give instructions. The only safe course to prevent the occasional disastrous ill effects is to keep the children under observation until the sores have healed up under the influence of proper treatment. Surely it is contrary to all modern teaching that children should be allowed to go about for weeks and even months with open sores, exposed to all sorts of possibilities of infection. A very simple trouble, and one which most commonly brings discredit on vaccination, is the auto-inoculation of pus producing the affection known as impetigo contagiosa. Formerly, I believe, it was the custom to see the vaccinated children later than the eighth day, and I strongly advocate that the vaccination should not be considered completed until the sores have satisfactorily healed.—I am, Sirs, yours faithfully,

T. COLCOTT FOX, M.B. Lond.

Harley-street, W., Dec. 6th, 1892.

"THYMOL AS AN ANTHELMINTIC REMEDY."

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to confirm the general results of Dr. Sonsino in his communication under the above heading in THE LANCET of Nov. 19th, 1892? For about two years I have used thymol as the one efficient remedy for expelling anchylostoma from more than two hundred patients. Unlike other vermifuges it seems to have a special action upon this worm, but I have always found that it was necessary to administer the drug two, three or more times. My usual habit is to give it once a week until upon two occasions no worms have been found in the stools after its administration. During the intervals the patient is dosed with iron to try to counteract his great anæmia. I originally gave ninety grains of thymol in six wafers within six hours, but I have now reduced the amount to sixty grains in two doses, accompanied by brandy. Even with this modified quantity anæmic patients are seriously collapsed for about four hours, the temperature falls about two degrees Fahrenheit, and the pulse and respirations become correspondingly less frequent. I only mention this to show that thymol must not be given in large doses without great care. Like Dr. Sonsino, I find that any coexisting ascarides or oxyurides are brought away by thymol, though not more satisfactorily than by the usual santonine and enemata. So far thymol has not yielded good results on the few tænia mediocanellata patients on whom I have tried it. It seems irrational to suppose that it could have any beneficial action on blood worms, such as filaria hominis. I have tried it, however, on several chronic cases of distoma hæmatobium without any effect. To these I gave it in doses of four grains three times a day for several weeks.

I am, Sirs, yours faithfully,
Cairo, Nov. 26th, 1892. F. M. SANDWITH, M.D.

"COMPOUND FRACTURE OF THE INFERIOR MAXILLA TREATED BY WIRE SUTURE."

To the Editors of THE LANCET.

SIRS,—In justice to the late Mr. Hugh Owen Thomas of Liverpool, perhaps you will allow me to draw attention to the fact that about twenty years ago, in your columns, he described his method of treating compound fracture of the inferior maxilla by wire suture. In your last week's issue Mr. Carter of Leeds describes, as if original, a procedure almost identical even to detail with that of Mr. Thomas. The Thomas method has been described in some of the standard Surgeries, and two editions of the *brochure* descriptive of the operation have been published, the last by Mr. H. K. Lewis in 1881. I have performed the little operation in quite a large number of cases, and the ingenious way in which Mr. Thomas has shown us how to twist the ends of the wire may save Mr. Carter, as it has saved me, from the necessity of the guttapercha splint.

I am, Sirs, yours faithfully,
Liverpool, Dec. 6th, 1892. ROBERT JONES.

THE CONDITION OF THE COMPETITORS' FEET AFTER THE LONG DISTANCE MARCH.

To the Editors of THE LANCET.

SIRS,—As considerable interest has very naturally been taken in the great marching competition held at Kingston in November I shall be glad if you will allow me to present to

your readers a few facts which have come under my own personal observation with reference to the condition of the men's feet after the march. By the courtesy of the officers on duty at the barracks I was allowed to see all the competitors who were present at the time when I arrived. Unfortunately I was unable to reach Kingston on Sunday, Nov. 6th, before the afternoon and by that time most of the competitors who had completed the distance had left. I wish to express my best thanks for the permission to see the cases which was so readily granted.

The greatest sufferer in his feet, mainly from ill-fitting boots, was a sergeant of volunteers. His feet were red, swollen, painful and blistered. The largest blister was situated between the ball of the great toe and the arch of the foot. It corresponded exactly in position with, and was obviously caused by, the projecting edge of the lining of the sole of the boot. The lining leather was altogether too hard. When the finger was pushed against the projecting edge the "upper," which was saturated and softened owing to the dirty state of the roads, receded and left the finger resting upon this sharp chisel-shaped unyielding ridge; so sharp was this, that it caused pain in the finger-tip when the latter was pressed firmly upon or drawn along it. There was also a blister on the little toe just on the classical position for a corn, due mainly to the fact that the boot had been built on a badly-shaped last. On the back of the heels were sores, and rather deep ones, due to friction against the seam which corresponded in position to the top of the stiffening. The shape of the heel of the boot was moreover such as to allow too much up and down movement of the foot with each step.

It was an agreeable surprise to go from this bad case and find the line men, who came in second in the competition, without exception in a far better condition. After an examination of each foot of each man in the team there was really little on the whole worth noting. One man—and he only on one foot, the right—had a blood blister the size of a shilling on the inner and upper aspect of the ball of the great toe. This was caused most probably by friction against the end of a deep and stiff wrinkle which ran across the boot. Two men had tender callosities in the soles of their feet. A few of the men had little blisters at the tips of some of their smaller toes. One complained of aching ankles and a pain in the arch of his foot, due chiefly, no doubt, to the fact that he suffered in a slight degree from flat foot. Some of the men showed no traces of suffering in their feet.

It is not my intention now to criticise in detail the regulation boot which this team wore, but merely to mention a few decidedly good points which it possesses, and which give it superiority over the commoner boots in the market, and especially over the bad pair which the volunteer referred to wore. 1. The general form of the sole is good, being true to the normal outline of the foot, not kidney-shaped, as so many inferior boots are made nowadays, owing to the employment of badly shaped lasts. 2. The lining is soft, smooth, and remarkably free from anything like a projecting seam. 3. The method of lacing is one of the best. 4. The shape of the heel of the upper part of the boot, made as it is to the natural form of the heel of the foot, is one of the best features. The cut of this heel is peculiar, and peculiarly good, one would imagine, as it must greatly prevent up-and-down friction, which is such a fruitful cause of ulcers and lesser troubles at the back of the heel.

It would be going beyond my present purpose to refer to other points which would more properly form part of a treatise on boots in general. My reason for desiring to see the competitors' feet and boots after a severe test such as this notable march was that I had made boots a hobby. At one time I suffered rather severely myself from corns brought on by London boots and pavements, and I soon realised how much larger a proportion of the public suffered in the same way than I had previously supposed to be the case. Considering the severity of the pain often endured, notwithstanding high prices paid for boots by some of the best makers, it seemed to me that this subject deserved very careful study, and would require a long series of experiments before anything like a satisfactory solution of the difficulty could be arrived at. The relief of corns is a comparatively simple matter, but their complete prevention is a problem not yet solved. As the result of many experiments, I have had boots made for myself by which corns can be produced or prevented in my own case at will. In the earlier attempts, as might have been anticipated, there were many difficulties and discouragements encountered. I shall be very glad to show the boots to any member of the medical profession who may be suffering from either corns or a tendency to flat-foot and wish to try an experiment; and I hope to have an early opportunity of showing them at one of our medical meetings.

I am, Sirs, yours faithfully,

London, Dec. 5th, 1892. ALFRED EDDOWES.

"TREATMENT OF OPHTHALMIA AMONGST CHILDREN OF THE POOR."

To the Editors of THE LANCET.

SIRS,—Your annotation on this subject affords me an opportunity of entering a protest against the fashionable system of boxing up a crowd of cachectic children in a special isolation hospital to cure them of infectious ophthalmia. "It is impossible," you say, "to confine them for many weeks consecutively to the infirmary, and the managers naturally hesitate to incur the expense of a special medical attendant and a staff of nurses, and the still greater expense of building &c. ..... When the treatment has been continued for a year or more the disease is practically abolished." Let us hope so. Infectious granular ophthalmia is, *par excellence, the* eye disease of Ireland. If it were the practice of Irish ophthalmologists to incarcerate hundreds of such cases in special isolation hospitals and to keep them there for "a year or more" under subjection to all the paraphernalia of green shades, darkened windows, compress bandages &c., thousands would not number the cases of blindness, or tens of thousands of pounds the cost of isolation hospitals. Let me advise English school managers and my brother ophthalmologists to try our method—to spend not one penny in the shutting up of a crowd of poor cachectic children in hospital, but to make arrangements to give them a run in the fields for a couple of months, combined with a little local treatment to the conjunctiva, a liberal farinaceous dietary and a suitable tonic treatment. If they will adopt this course I can promise them a cure—in the average case—not within "a year or more," but within a month and at a nominal cost. I subscribe to the theory of isolation as a protection against infection, but am of opinion that, in this disease at least, that hobby is being ridden to death.

I am, Sirs, yours truly,

ARCHIBALD HAMILTON JACOB, F.R.C.S.I.

Dublin, Dec. 8th, 1892.

"MEDICAL AID ASSOCIATIONS."

To the Editors of THE LANCET.

SIRS,—In view of the inquiry by a committee of the General Medical Council into the proceedings of Medical Aid Associations, may I appeal to all medical men who have had experience of these bodies either in the capacity of medical officer, locum tenens, or otherwise to communicate with me The experience of former medical officers will be particularly valuable as being less liable to be biased by personal interests than that of present incumbents, and there seems no means of communicating with such except by this public appeal. I am, Sirs, yours faithfully,

Birmingham, Dec. 8th, 1892. LESLIE PHILLIPS.

"PERIODATES IN CHOLERA."

To the Editors of THE LANCET.

SIRS,—There is a paragraph in your "annotations" under this head (p. 1230) which is not in accordance with chemical and physiological laws, which I therefore desire to correct. The misstatement is that the action of the periodates "can only depend on the readiness with which they give up free iodine." Permit me to explain that, although many hundreds of observations have been made of the action of the periodates upon the living body in health and in disease, in no single instance has an examination of the body's fluids or any one of its various excretions ever yielded "free iodine."

I am, Sirs, yours faithfully,

London, Dec. 7th, 1892. RICHARD WEAVER, F.C.S.

SUCCESSFUL VACCINATION.—Mr. Frank L. C. Richardson, public vaccinator for the Rhayader district of the Rhayader Union, Radnorshire, has received a Government grant for successful vaccination for the second time in succession.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Workhouse Extension at Stockport.

THE Local Government Board, through their inspector, have for some time been urging the Stockport guardians to build a new workhouse in supplement of the accommodation existing at their present establishment at Shaw Heath. At their last meeting the guardians had under consideration the Board's recommendation, but they decided to reject it and to extend their present workhouse instead, and thus to provide for present needs. The guardians appear to be labouring under the pleasant delusion that the pauper class are steadily becoming more temperate and that destitution is therefore certain to decrease—at any rate, in the Stockport Union. They therefore are about to inform the Local Government Board that in their opinion any considerable extension of workhouse accommodation is at the present juncture unnecessary.

Small-pox Prevalence.

Since my last letter fresh cases of small-pox have been reported in many of the towns hereabouts, in which it had been prevalent more or less for some weeks previously. At Warrington, Liverpool, Oldham, St. Helens, and also in this city itself, fresh cases have occurred from time to time; whilst a sharp outbreak has recently taken place at Lymm, a residential suburb of Manchester. Infection appears to have been imported in the first instance from Warrington, and the disease has since spread somewhat rapidly. Altogether about twenty-four cases have been reported up to the present date, and, as the village of Lymm is but a small one, considerable anxiety amongst the inhabitants has been the not unnatural result. According to the local papers the Lymm local authority are doing their best to erect a hospital for the accommodation of the small-pox patients who are now being nursed at home; but hitherto their efforts have been unsuccessful.

Salford Royal Hospital: an Experiment.

The annual meeting of the Board of Governors of this excellent charity was held on Nov. 24th, at the Royal Hospital in Chapel-street. The report stated that the abolition of the recommended system had been agreed upon by the governors, and that for the period of the ensuing twelve months, at any rate, they had decided to try the experiment of admitting to the benefits of the charity all persons, not in receipt of Poor-law relief, who were too poor to be able to afford to pay for medical attendance and medicine. During the past year the experiment of allowing some of the members of the nursing staff to attend private patients at their own homes had been tried with encouraging success, and in several instances applications had been refused in consequence of the limited number of nurses available for this purpose. Altogether the hospital and the dispensary which is attached to it appear to be in a flourishing condition, and it is certain that both departments of this excellent institution are doing an admirable and much-needed work in the County Borough of Salford.

The Ladies' Health Society and their Work.

From a recent report it appears that the female visitors who act under the joint direction of the Ladies' Health Society and the medical officer of health are still doing useful work in the slums of our city. In the course of last quarter the female health visitors, thirteen in number, paid nearly seven thousand sanitary visits to poor people and, in addition, made 650 special inquiries on behalf of the medical officer of health into cases of infectious disease or of death. According to the returns just issued the work of the health visitors appears to have increased enormously during the recent quarter as compared with previous ones. It is, however, explained in the report that this increase is actual only in part, and to a certain extent results from the adoption of a new system of bookkeeping in the Public Health Office, by which every sanitary visit is placed to the credit of the appropriate health visitor. In the pamphlet from which this information is taken there is a table which shows the amount of work done in the several districts of the city, and accompanying the table is a chart showing the relative position of the several districts and indicating by appropriate shading the areas which still require the attention of the Society. In addition to the work of the Ladies' Health Society here referred to there is another association which appears to be working on similar lines, and which will eventually do good work in Manchester. This association is termed "The Ladies' Society for Visiting the Jewish Poor." It has been established for several years and has been usefully but quite unostentatiously employed amongst the Jewish residents of Red Bank, one of the worst and most neglected districts of the city. The female district visitor employed by the Jewish Society, in common with the health visitors of the before-mentioned Society, works under the supervision of the medical officer of health, and we learn that this excellent organisation will shortly provide a second district visitor for the benefit of the Jewish poor in the populous neighbourhood of Strangeways, which is almost exclusively occupied by members of that community and where the conditions of life sadly require the attention of the Society.

Owens College.

At the last meeting of the Council Mr. Thomas Jones, M.B. Lond., F.R.C.S. Eng., surgeon to the Manchester Royal Infirmary, was appointed to the Professorship of Surgery about to become vacant by the resignation of Professor A. W. Hare. At the same meeting the Council established a Professorship of Clinical Surgery in the College, and appointed to this professorship Mr. Walter Whitehead, F.R.C.S. Edin., F.R.S., surgeon to the Manchester Royal Infirmary. Both these appointments are subject to the approval of the court of governors.

December 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

South-west Lancashire Assizes.

MR. JUSTICE GRANTHAM is presiding in the Crown Court at the Assizes, which opened on the 5th inst. The calendar is a heavy one, containing the names of nearly 120 cases. Among those of medical interest was that of William Henry Hale, described in the calendar as a physician, but the genuine character of whose American diploma is even doubtful; while it is an undoubted fact that he possesses no British qualifications to entitle him to practise in the United Kingdom. He was charged with obtaining money by false pretences from a number of persons who consulted him for deafness. He was to-day convicted and sentenced to eighteen months' hard labour. There is also the case of the man Duckworth, charged with the murder of a little girl at Blackburn. There is another charge of murder against a woman, she having left her child on a doorstep, taken its clothes away and so caused its death. Four men are charged with the manslaughter of a boy who dared them to throw him into the canal. They, taking him at his word, threw him in, and, though they did all they could to rescue him, he sank at once and was drowned. There are many other very serious offences.

Advertising Quacks.

The utter futility of the recent Act for the suppression of advertising quacks is shown by what has occurred in this city. Posters and handbills of a suggestive and even indecent character are industriously distributed, but they are so carefully worded as not to constitute a breach of the law. Unholy alliances between duly qualified and registered medical practitioners and these obscene quacks continue to exist, and it is greatly to be hoped that some means may be found of bringing them before the Medical Council. At the same time the public must take their full share of the blame for the continual existence of these gentry. There is a positive demand for quackery and an impatience with the rational bounds and etiquette of legitimate medical practice.

A Year's Apprehensions for Drunkenness.

The Head Constable's report gives a total of 10,088 persons (5613 males, 4475 females) as having been drunk when apprehended. Of these, 5404 were drunk and disorderly, 2998 drunk and incapable, 510 assaulting police constables, 184 other assaults and 992 other offences. Three-fifths of the whole number were natives of Liverpool, Ireland furnished 1609, Scotland 324, Wales 175, the Isle of Man 20 and foreign countries 265. These figures are eloquently in favour of foreigners, a large number of whom are employed in various capacities on board ships and steamers, and whose chief recommendation is their sobriety.

A Year's Accidents.

Another table of melancholy interest in the Head Constable's annual report is that of the number of accidents happening within the city and reported by the police. Of a total of 2127 there were 124 fatal cases. Running over by carts, cars &c. caused 400, injuries on board vessels in docks 334, falling into docks, canals &c., 404. Only 65 were caused by burning and 8 by firearms.

December 8th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Tynemouth Infirmary.

THE annual meeting of the Tynemouth Victoria Jubilee Infirmary has been held. During the year there had been 118 in-patients, being an increase of twenty over the previous year. The financial statement was satisfactory, showing a balance in hand on the year's work. Alderman R. M. Tate, J.P., retired because, he said, he did not believe in a perpetual chairman.

Westmoreland and Cumberland.

The twenty-third annual report of the Westmoreland and Cumberland Hospital Sunday Fund has been issued, which shows that the total sum collected and remitted to the fund during the present year was £962, against £893 in the previous year. Of the £912 distributed by the committee the Cumberland Infirmary (Carlisle) got £493; Carlisle Dispensary, £47; Carlisle Fever Hospital, £121; Silloth Convalescent Institution, £111; and Workington Infirmary, £140.

Cumberland Infirmary Nursing Scheme.

The Cumberland Infirmary nursing scheme is now said to be fairly launched. The contracts for the building have been let for about £2000 and the amount of money in hand reaches £2500. More it is confidently expected will be provided by the public. The existing nursing staff will be removed into the new buildings as soon as they are ready, and it is hoped to add twenty more nurses, who will be for the most part employed in nursing the sick in various parts of the city of Carlisle.

The late Dr. M. W. Taylor.

The *Carlisle Journal* has a long appreciative notice of the late Dr. M. W. Taylor, who died at Earl's Court, London, last week. He was long in active practice in Penrith, Cumberland, where he played a conspicuous part in the formation and maintenance of the Cumberland and Westmoreland Archæological Society, and to him is said to belong the credit of having been the first to point out the dangerous properties of milk as a means of transmitting scarlet fever. He also wrote a valuable paper on the Fungoid Origin of Diphtheria.

The Outbreak of Small-pox in the Northallerton Union.

On Wednesday, Nov. 30th, at the adjourned meeting of the Northallerton Rural Sanitary Authority, cases of small-pox were reported in the district, one of which proved fatal yesterday. The medical officer has urged the necessity of revaccination in all cases. So far as could be ascertained the disease had been brought into the district by cattle drovers or tramps. Owing to the spread of the disease in various parts of the country the Darlington Board of Guardians have rescinded a resolution adopted two years ago, not to prosecute parents for omitting to have their children vaccinated.

The New Asylum at Sunderland.

The Sunderland Town Council having applied to the Local Government Board for sanction to borrow over £20,000 for the purchase of a site for a new lunatic asylum at Ryhope and other objects, and improvements in the town, instructions have been given for Colonel Charles Henry Luard, R.E., to hold an inquiry at the Town Hall on Dec. 8th at 11 A.M.

The Bowes Museum at Barnard Castle.

There is a financial hitch in the carrying on of this very fine museum, and the trustees have applied to the Charity Commissioners for more means to keep up the museum and park. The commissioners have named £1000 as the maximum to be allowed for one year, and suggest local subscriptions and a charge for admission. The trustees reply that they have no power to charge for admission. The difficulty is, however, only temporary, as it is said that a substantial portion of the legacy of the late Mr. John Bowes of £100,000 will soon be available.

Scheme for Sick Nursing at Seaham Harbour.

A large town's meeting has been held at Seaham Harbour to consider and promote a scheme for sick nursing which has been proposed by the Marchioness of Londonderry, who opened the proceedings. A committee was appointed to consider the matter in all its bearings, and also the question of the future use of the infirmary.

Newcastle-upon-Tyne, Dec. 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS)

Public Health Affairs in Leith.

OWING to the prevalence of scarlet fever and measles in Leith the attendance at the board schools has fallen off by a third, or even a half, in some of the schools. The School Board met to consider the question of attendance, and decided to close the schools if they obtained a certificate from the medical officer of health. By obtaining such a certificate it is understood that the education grant for the schools is obtained notwithstanding that they are closed. After this a special meeting of the Public Health Committee was held, and the application of the School Board considered, when it was decided that they would not take the responsibility of closing the schools, nor, as it appears, were they prepared to acknowledge that there was an epidemic in the burgh. Leith has not adopted the system of notification which has been so productive of benefit to the adjoining community of Edinburgh—in fact, the public health authorities seem to appreciate very imperfectly their important responsiblities to the community. There has been trouble about hospital accommodation for infectious diseases, there was much dissatisfaction at the time cholera was rife in Hamburg as to the precautions at Leith against its admission into this country, and now there is this epidemic of scarlet fever and measles, not to mention typhus fever and a death-rate of somewhere about 58 per 1000. It can hardly therefore be wondered at that there is a feeling of dissatisfaction and want of confidence in the actions of those responsible for the care of the public health.

Edinburgh Hospital for Women and Children.

The annual meeting of the subscribers to this hospital was held last week, Dr. Sibbold presiding. At the dispensary there had been 225 patients on the books, and the total visits to it were 1537. In the cottage hospital attached to it thirty-nine patients had been received in the course of the year, sixty-nine visits had been paid by the resident medical officer and sixty-six by students. The balance-sheet showed a deficiency of about £31, the total expenditure for the year being a little over £279.

Royal Society of Edinburgh.

The first ordinary meeting of this Society was held on Monday, Professor Sir Douglas Maclagan, M.D., in the chair. The chairman thanked the Fellows for doing him the honour of again electing him as their president and then proceeded to deliver a short introductory address. In it he referred to the meeting of the British Association which had been held in Edinburgh since they last met and to the important part which Scotsmen and Fellows of the Royal Society had taken in the establishing and working of the Association.

The Medical Preliminary Examination.

The Joint Board of Examiners, created by Ordinance No. 13 of the Universities Commissioners, met in Edinburgh for the first time in the end of last week. The representatives from Aberdeen, St. Andrews and Glasgow were present as well as those representing Edinburgh. The Board resolved:—1. Beginning with the examinations in 1893 the papers set for the Arts and Medical Preliminary Examinations shall be the same. 2. In judging the English paper the examiners shall fix a higher and a lower standard, the lower being sufficient for candidates in the Medical Preliminary Examination. 3. Every candidate for the Medical Preliminary Examination must pass on the higher standard in at least one of the required subjects, and may pass on the lower standard in the remaining subjects where there is a lower standard. 4. The standard for French and German in the Medical Preliminary Examination shall be that prescribed in the Arts Ordinance,

No. 11. 5. For the first Medical Preliminary Examination, to be held under this Board in the spring of 1893, no candidate shall be required to pass on the higher standard in any subject. 6. The ensuing spring Preliminary Examinations for Arts, Science and Medicine shall begin on Saturday, April 1st next. 7. For the Preliminary Examinations in April next each University shall accept the equivalents already announced in the calendar of that University.

The Waste of Water in Edinburgh.

The Works Committee of the Edinburgh and District Water Trust are taking further steps to check the waste of water in the city and district. Two large meters are to be placed on one of the main pipes. The engineers have been instructed to report on the construction of a pressure reducing tank to check waste during the night; they have also been instructed to bring up a monthly report of the night inspections and investigations for the prevention of waste.

Health of Edinburgh.

At the meeting of the Public Health Committee held on Dec. 6th the report was submitted on the health of the city for November. The total number of deaths was 495, making the death-rate 22·43 per 1000, as compared with 25·97 for the corresponding month of last year and 14·42 for November, 1890. The average death-rate for the month during the past five years was 18·04 per 1000. The death-rate in the three main divisions of the city was, in the New Town 17·38 per 1000, in the Old Town 31·56 per 1000 and in the Southern Division 13·08 per 1000. Of the deaths, 47·88 per cent. were of children under five years. Diseases of the chest caused 26·46 per cent. of the deaths and zymotic diseases 30.30 per cent. Of the zymotic diseases, 1 was from typhoid fever, 7 from diphtheria, 12 from scarlet fever, 126 from measles, and 3 from erysipelas. The birth-rate was 26·87 per 1000. The intimations of infectious diseases during the month numbered 2350; of these, 1 was typhus fever, 21 typhoid fever, 26 diphtheria, 1 small-pox, 244 scarlet fever, and 2057 measles.

Health of Aberdeen.

For last week the returns of zymotic cases were: Measles, 359; scarlet fever, 19; diphtheria, 4; erysipelas, 2; puerperal fever, 1; total cases, 385; being a decrease of 85 as compared with the previous week. The decrease is due to the decline of the measles epidemic.

Aberdeen University Senatus.

At a meeting of the Senatus of Aberdeen University held last Saturday it was reported that the Milne Medical Bursary had been conferred on Mr. Robert G. Henderson, M.A.; the Duthie Medical Scholarship on Mr. W. E. G. Duthie, M.A.; and the Gregor Medical Bursary on Mr. Andrew Thomson. Professor Matthew Hay was re-elected an assessor from the Senatus to the University Court. It was intimated that Mr. J. Scott Riddell, M.A., C.M., M.B., had been appointed assistant to the professor of surgery; Mr. Alex. Brown, M.A., B.Sc., to the professor of natural history; and Mr. John Marnoch, M.A., M.B., C.M., to the professor of institutes of medicine.

Public Health of Glasgow.

In the fortnight ending Nov. 26th, the death-rate was 22·3. There were four deaths from small-pox—a male, aged thirty-seven, vaccinated; a female, aged twenty-eight, vaccinated; a male, aged twenty-one, "hæmorrhagic," unvaccinated; a male, aged four weeks, "hæmorrhagic," unvaccinated. This number had not been equalled since the spring of 1884. Small-pox, however, is diminishing. Three weeks ago there were fifteen fresh cases, two weeks ago nine fresh cases, last week seven fresh cases. The authorities thus seem to be mastering the outbreak. Scarlet fever is decreasing, but measles is rapidly increasing.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Outbreak of Fever at the Hibernian Military School, Phœnix Park.

SIR C. CAMERON, M.D., in his report to the Board of Works as to the outbreak of sickness among the boys in the Hibernian school, states that the fever is of a non-enteric character, of short duration, and probably in origin dietetic. As stated recently in these columns the health of the boys has been exceedingly good, the mean annual death-rate per 1000 during the last three decades having been 6 5, 4 5, and 3·75 respectively, and there has not been a single death from any of the principal zymotic diseases for the past ten years. Some months since the Board of Works made arrangements to apply the "oxygen process" to the school outfall in the coming year, while the supply of sterilisers used on the irrigation field has been increased. The cause of the outbreak will, however, be investigated by a committee, of whom Sir George Porter, Bart., will be chairman, when the dietary of the boys, the water-supply and other matters will be dealt with. It is rumoured that the water-supply of the school is insufficient, and that water has to be stored in tanks for the use of the inmates.

Transactions of the Royal Academy of Medicine, Vol. X.

In addition to the papers noticed in this column last week I may allude to some others in the sections of Surgery and Pathology. "Ballooning of the Rectum" is the title of a communication by Mr. Hamilton. Attention was drawn to this condition in THE LANCET of 1889 by Mr. Bryant, but Mr. Hamilton described the symptom in 1883. He has seen this condition under the most varied and dissimilar circumstances, but cannot fix its value as applied to the purpose of diagnosis or prognosis of disease of the intestine higher up. There are three papers on cerebral surgery: one of a case of traumatic epilepsy, aphasia and paralysis of six years' duration, treated by trephining, and in which recovery took place, by Mr. Heuston; trephining for cerebral cyst by Mr. Wheeler, and for uncomplicated word blindness by the same operator, in the last case with success; and trephining for meningitis, by Mr. McArdle. In the Section of Pathology Mr. Patteson describes two cases of adenoma of the breast observed in two children, aged thirteen and twelve years and nine months respectively; and Dr. E. H. Bennett has an excellent paper on the Rarer Forms of Fracture of the Carpal Extremity of the Radius, and gives some examples illustrating more particularly fracture of the radial styloid and longitudinal fracture or fissure of the lower end of the bone. Dr. James Little has a short account of a case of painless cancer of the liver, the organ weighing 178 ounces; and Dr. A. W. Baker contributes a report on the Present Aspect of Dental Caries. Space will not admit of further references; but the present volume is not less valuable than its predecessors.

County Wexford Infirmary.

Mr. Gibbon, one of the governors, is plaintiff in an action against the management of the infirmary with a view to restraining the defendants from applying the interest on £1000—money left to the infirmary—towards increasing the salary of Mr. Hadden, the surgeon of the institution. The facts are as follows:—Mr. Hadden was elected about four years since, the advertisement of the vacancy stating that the salary would be £120 yearly, with residence; but it could only be, as a matter of fact, £94 per annum, the sum presented under the statute by the grand jury. It was chiefly in consequence of this that the governors devoted the interest of the £1000 bequest towards increasing the surgeon's salary. Whichever way the matter may be decided, the interests of the infirmary must necessarily suffer.

Health of Ireland: September Quarter.

The births registered during the quarter amounted to 25,340 and the deaths to 17,167, or 14·8 per 1000. The birth-rate was 0·5 under the average for the corresponding quarter of the past ten years, and the death-rate was 0·2 over the rate. There was a marked subsidence of the epidemic of measles in Dublin and Belfast. Scarlet fever proved very fatal in Castlereagh Union, and whooping-cough was prevalent in some unions in Connaught, but the general mortality from these diseases was below the average. Compared with the corresponding quarter of 1891, the returns of pauperism show a decrease of 279 in the average number of workhouse inmates on Saturdays during the quarter, and a decrease of 3384, or 5·5 per cent., in the average number of persons on out-door relief. The fever (typhoid) at present prevailing in Cork is of a mild type, and consequently the mortality is very low.

Entries at the Belfast Medical School.

During the present winter season 164 students are attending the Royal Hospital, being only three less than last year. At the Queen's College there are 220 in the medical faculty, being between thirty and forty students less than in 1891-92. This falling off is in the number of the first-year men

principally, but it must be recollected that last year's entries (to avoid the fifth year) were phenomenally large.

The Samaritan Hospital.

A meeting of the committee of this hospital was held on Dec. 6th for the purpose of appointing two honorary attending physicians, when Dr. Campbell (Demonstrator of Anatomy at Queen's College, Belfast) and Dr. St. Clair Boyd (Surgeon to the Western Hospital for Women and Children) were elected.

The Belfast Medical Students' Association.

A deputation from the above association, consisting of the secretary and ex-secretary, presented a memorial to the Belfast Board of Guardians on Tuesday last. It appears that in 1891, at the request of the Students' Association, the board granted the privilege to the students of entering the wards of the union infirmary for the purpose of receiving clinical instruction, of which the students availed themselves, but that, on the ground that the teaching staff was not sufficiently large, the Senate of the Royal University refused to accept the certificates of the medical officers. The memorial referred to the difficulty students had in gaining experience in certain diseases which would be obviated were they able to attend the infirmary, and they beg, as now an election is about to take place owing to two medical resignations, that the board of guardians will increase the number of their medical officers. The chairman said that what the students wanted was to have the staff increased and the infirmary thrown open in the same way as the Royal Hospital. If they had power to do this they would be most happy to meet their views, but he was afraid that it would be objected to, as they could not increase the staff without expense. One of the deputation said this could be met by the students' fees. Ultimately it was agreed that a subcommittee of the board should meet the Medical Students' Association and the President of Queen's College, Professor Redfern, and Professor Cuming, on Tuesday, Dec. 13th, to consider the subject.

The Cork Dispensary Committee have elected Mr. Callaghan medical officer in the room of Dr. Townsend, resigned.

December 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Students v. *Town Councillors: Termination of the Dispute.*

A FORTNIGHT ago I communicated the particulars of the conflict that had arisen between the dressers of the Hôpital St. Antoine and the section of the Municipal Council charged with the superintendence of the Paris hospitals. The matter was so warmly taken up by the entire mass of students that the competitive examinations for admission to "dresserdom" had to be deferred *sine die*, and the expediency of a general strike of dressers was even mooted. Fortunately, more moderate counsels have prevailed, and the reproach of having abandoned poor, innocent sufferers to their own resources has been spared the *jeunesse médicale* of this Faculty. The quarrel has ended, as most quarrels should—viz., in a compromise. Acting in accordance with a formal wish expressed by the Société Médicale des Hôpitaux and the Conseil de Surveillance de l'Assistance Publique, the director of the latter department and the Municipal Council have consented to let bygones be bygones, and the offending *externe*, M. Salmon, has accordingly been reinstated. Henceforth all such misunderstandings will be dealt with by a Commission of the Conseil de Surveillance mentioned above. The *examens d'internal et d'external* have been resumed as usual, and the sensitive and fiery Gaul, both municipal and medical, will, it is hoped, now that *l'honneur est satisfait*, "pursue the even tenour of his way."

Approaching Removal of the Académie de Médecine.

The ordinary tourist, however well acquainted he may be with noteworthy buildings in Paris, would assuredly be puzzled to specify the situation of the dingy structure within whose portals the learned members of the Académie de Médecine periodically foregather. The reason is not far to seek. The building is quite unworthy of the society it shelters, its aspect being forbidding and mean, and the Rue des Saints-Pères exceedingly narrow at that point. Many attempts have been made by the Academy to secure more fitting quarters, and I am happy to be able to announce that a move will be made at no distant date to the Rue Bonaparte, where, in exchange for a piece of land belonging to the Academy and 263,500 francs, the Municipal Council have, on behalf of the Assistance Publique, agreed to cede a building hitherto occupied by a branch of the Mont-de-Piété or pawnbroking office.

A Sensible Measure.

The careful observer cannot fail to notice the ravages made amongst the working classes of Paris by the habitual abuse of such beverages as absinthe, vermouth, amer Picon, eau de mélisse, vulnéraire &c. During a visit I paid to Dr. Lancereaux's wards at the Hôtel Dieu, on Monday last, I saw two well-marked instances of paralysis of the extensors in women addicted for years to the excessive consumption of vermouth and eau de mélisse respectively. In the latter case the forearms as well as the legs were affected. In one man under Dr. Lancereaux's care the abuse of these liquors had so exaggerated the reflexes, that a slight tickling of the soles of the feet made him bound violently out of bed. Dr. Lancereaux, who has for many years paid special attention to alcoholism in all its forms, is never tired of agitating for the repeal of the taxes on such comparatively innocent beverages as beer, cider and perry. These he distinguishes from their noxious congeners by the name of *boissons hygiéniques*. He contends, and rightly contends, in my opinion, that the cheapening of these drinks would contribute powerfully to the diminution of alcoholism. This view appears to have gained some adherents in the Chamber of Deputies, for Parliament is now considering a proposal to abolish all duty on wine, beer, cider, perry and hydromel. No beer worth drinking can be procured here for less than threepence a glass, which, with at least a penny for the waiter, brings the cost up to double what it is in England. In the *cafés* on the boulevards a glass costs forty or fifty centimes. It is to be hoped that the Chamber will, if it adopts the proposed measure, supplement it by increasing the duty on beverages, the consumption of which, freely adulterated as they are, constitutes a danger to the community. I am persuaded that this would sensibly diminish the mortality from phthisis in this city. About 10,000 victims succumb annually to this scourge in Paris.

Æsthetic Disinfection.

The gratuitous disinfection of clothing and bedding provided by the municipality is happily becoming more and more *à la mode* in Paris; but side by side with the public ovens there have sprung up private ones whose claims to patronage, as set forth in elaborate circulars, consists in the fact that the yellowing of the linen which occurs at the municipal establishments is by their process counteracted by further treatment. The Conseil d'Hygiène will soon take the question into consideration and it is intended to have the operations of these enterprising *industriels* carefully superintended by the medical inspectors attached to the Prefecture of Police. A code of regulations will also be issued, so as to render private disinfection a reality.

December 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Russian Poland.

YESTERDAY'S official report of the state of cholera in Russian Poland gave the numbers of cases and deaths in the various Governmental districts as follows: Radow 28 and 12, Siedlec 32 and 18, Lubin 8 and 6, Warsaw 4 and 7, Lomza 2 and 3, in three days.

Remuneration of Medical Students who served in the Hamburg Epidemic.

During the recent cholera epidemic in Hamburg a misunderstanding arose as to the remuneration of the medical students who volunteered their services. The dean of the medical faculty here has now published the following: "The Cholera Commission of the Senate of Hamburg, in a letter addressed to the undersigned dean, expresses its thanks to all the students of medicine who assisted in combating the cholera epidemic, and at the same time intimates the wish to send the undermentioned fee to all those who worked in the Hamburg hospitals in the belief that their services were to be remunerated at the rate of 20 marks a day."

The Charité.

In the fiscal year 1889-90 the number of patients treated in the Berlin Charité was 21,457, in 1890-91 only 20,352. This decrease is attributed to the opening of the hospital in Urban. On the other hand, the number of women who have been delivered in the Charité has been almost constantly increasing since 1876. In that year it was 879 and in 1889-90 it was 1564.

The Berlin Hospitals.

At a meeting of the Central Committee of the Berlin Medical District Associations on the 25th ult., it was resolved to express to the municipal authorities of Berlin the wish that greater opportunity should be afforded by the municipal hospitals for the practical training of medical men, and that the medical service in the said hospitals may be so organised that there may be one physician and two assistant-physicians for every 100 or 120 patients.

Myxœdema.

The first trial made in Germany of the treatment of myxœdema by implanting the thyroid gland of an animal, or injecting the juice extracted from such glands, has been recently made by Professor Mendel, of Berlin, who reports a slight improvement in the condition of the patients.

The Hofmann House.

The Hofmann House, called after the late Professor Hofmann, which is to serve as the home of the German Chemical Society, is estimated to cost 1,200,000 marks. The Langenbeck House cost only 300,000 marks.

"An Indian Oculist."

An "Indian oculist" was expelled from Munich by the police last Thursday.

December 4th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Visit of the Khedive.

HIS HIGHNESS THE KHEDIVE, accompanied by his Greek physician and other members of his staff, paid an official visit to the School of Medicine on Nov. 24th and was much pleased with the signs of recent progress which were shown to him. The pathological museum has now been seriously taken in hand and has lately been enriched by a valuable collection of calculi, old instruments and surgical specimens gathered together by Duruy Bey, the professor of surgery. This medical school was started in 1837 by French enterprise, revived again temporarily under distinguished Germans, such as Griesinger, Bilharz and Pruner, and now is being successfully galvanised into life by English energy.

Mecca Pilgrimage.

The annual pilgrimage to Mecca passed off without any question of cholera being raised, and some 18,000 returning pilgrims passed through the observation encampment at Tor during July and August in very fair health. It is true that thirty-nine of them, mostly Turks, Persians and Tunisians, died in camp, but the quarantine statistics show that twenty-nine of these deaths occurred in old men between the reputed ages of sixty and ninety-five. The most common causes of death were general debility and chronic enteritis. The entire absence of cholera at Mecca in 1892, in spite of its presence there in the two preceding summers, is interesting when compared with the alternative march of cholera along the north of Europe. It would appear that cholera is never endemic in Mecca in spite of the utter neglect of sanitation, but requires always to be imported by pilgrims from India or Persia.

The Nile Flood.

The supply of water in the river during the summer months of this year was exceedingly low, and, as often happens, this was followed by a dangerous rise. It was not until September that anxiety was felt about the safety of the Nile banks; but for two months incessant vigilance had to be displayed. The chief danger was in the lateness of the flood and in the fact that the maximum rise was kept up for twenty-one days instead of for one day, as in 1887, when the last high Nile took place. To the credit of English engineers it ought to be noted that the floods of 1887 and 1892 are the only great floods on record in the history of Egypt when no breach of the banks has taken place and no disaster has occurred. There are, roughly speaking, some 7000 millions of cubic metres of water stored in the irrigation basins of Upper Egypt in a high flood year, and this water has to be discharged again into the river, late enough to prevent any flooding in Lower Egypt, but early enough to ensure time for the crops to be sown and ripened before the hot weather can dry them up. If the basins are emptied at the slowest possible rate it means that 11,000,000 cubic metres of water are added every hour to the already overcharged river. In 1887 about 39,000 acres of crops were destroyed by the flood, and this damage is hardly worth mentioning in comparison to the disasters of 1878, when whole villages and miles of railway were swept away. In 1892 only 7700 acres of crops—mostly maize—have been destroyed. In order to successfully manage this year's flood a special credit of £12,000 was voted and spent chiefly on stone, sacks, timber, trees and rope &c. For the last month the river has been sinking rapidly and all danger is long over.

Malarial Fevers.

Dengue has not appeared this autumn, though it did so in an epidemic form after the high flood of 1887. Intermittent fever, usually rare and seldom before seen in Europeans without previous malarial taint, has occurred several times this autumn in consequence of the high Nile. The victims can be traced to dwelling-houses the floors of which are below the height of maximum river rise, as in many of the oldest parts of the town. The plasmodia of malaria have for the first time in Egypt been discovered in the blood of some of these patients by Dr. Kauffmann. Treatment with methylene blue has been tried in the cases of some natives, but it does not appear to be in any way superior to quinine for uncomplicated malaria, as occasionally seen in this country.

Tænia Nana.

Twenty worms of the tænia nana variety were recently found in the small intestine of a negro, who was admitted moribund into the native hospital. This is only the second time the worm has been found in Egypt since Bilharz first discovered it here in 1851.

Port Said Hospitals.

Dr. Robertson, after being eight years in charge of the native hospital at Port Said, has lately succumbed to a severe attack of neglected dysentery. His death, which is universally regretted by all who knew him, is the first which has taken place among English doctors since they were admitted to the Government service in 1884. He has been succeeded by Mr. Frank Milton. The hospital has 100 beds and is nursed by seven French sisters of charity, and, besides gratis patients, admits those who pay at rates varying from four to eight francs a day. Many of the poorer patients are admitted from Turkish vessels, suffering from chronic dysentery and malaria. The second hospital at Port Said is an English one, due to the energy of Lady Strangford shortly before her death. The staff consists of an English doctor, three English nurses and a probationer. There are thirty-five beds, all for paying patients, and there has recently been added an infectious ward capable of holding eight beds.

November 28th.

Obituary.

M. W. TAYLOR, M.D. EDIN., F.S.A.

THE announcement of the death of Dr. Taylor, which took place on the 24th ult., will be received with regret by all who had the privilege of his friendship. He was born in 1824 at Portobello, near Edinburgh, and was educated in that city and at Portsmouth. Having obtained his degree, which by special permission of the Senatus he gained at the age of twenty, he acted as class assistant to Professor A. J. Balfour, and distinguished himself by the proficiency he attained in botanical studies, in recognition of which he was elected a Fellow of the Botanical Society of Edinburgh. Towards the end of 1844 Dr. Taylor proceeded to Paris, and there studied under the most eminent surgeons of that city. Thereafter he visited various foreign capitals, and thus extended his knowledge of the methods pursued by physicians and surgeons abroad. In 1845 he repaired to Penrith, and, having acted for a few months as *locum tenens* to Dr. John Taylor, he subsequently succeeded to the practice on the

death of that gentleman. In 1858 he married Miss M. W. Rayner, daughter of a Liverpool merchant, and for nearly forty years carried on with great success his professional work in the above-mentioned city. As evidence of the esteem in which he was held by his fellow townsmen and in recognition of the value of his services, both public and professional, he was presented, on his retirement from practice, with a handsome service of plate. Dr. Taylor's contributions to medical literature were neither few nor unimportant. His investigations into the part played by milk in the dissemination of scarlet fever excited considerable interest at a time when that article of domestic consumption had been previously unsuspected as a source of infection. The fungoid origin of diphtheria also engaged his attention, and in a paper contributed to a local medical society fresh light was thrown on that important matter. Dr. Taylor, however, did not confine his interest to medical and pathological topics, but extended his sympathies to other subjects connected with the mental and physical well-being of his neighbours. He was the founder of the Penrith Literary and Scientific Society, and the formation of the free library, reading-room and museum was largely due to his exertions. Altogether the citizens of Penrith have reason to congratulate themselves that for so many years they numbered the deceased physician amongst them. The funeral, which took place on the 28th ult. in the grounds of Christchurch, was attended by all the more prominent residents of the town, many of the friends of the deceased coming from a distance to show their respect to his memory.

ALFONSO CORRADI.

THOSE of us who learned to admire and esteem Professor Corradi at the last International Congress of Hygiene and Demography and who looked forward to renewing our acquaintance with him at the International Congress of Medicine and Surgery in September next will hear with great regret that he died at Pavia on the 28th ult. in his sixtieth year.

Alfonso Corradi was a native of Bologna, where he was born on the 6th of March, 1833. He passed through a brilliant curriculum in general and professional education at the Local University, where he graduated with the highest honours in medicine and surgery in the years 1855 and 1856. He was yet a young man when he filled the post of assistant-surgeon at the Ospedale di Vita, after which, in 1859, he gained in public competition, over several very formidable rivals, the coveted professorship of general pathology in the University of Modena. In 1863, again by open competition, he was appointed to the chair of general pathology at Palermo, where he taught with great success till 1867, when he was transferred to Pavia as lecturer on general therapeutics, materia medica and experimental pharmacology—a post which he held till last year, at the close of which he was called by the unanimous vote of the medical faculty of the University of Bologna to the chair of the history of medicine in that seat of learning.

His powers as a clinical physician and private consultant were only second to his ability as an expositor, whether by tongue or by pen, from the professorial chair or at the editorial desk. As early as 1857 he started, in conjunction with Professor Brugnoli, the *Rivista Medica*, which soon rose to be the first of its class in Italy; but ephemeral work was far from exhausting his energies. Within eight years from that date he had published the first volume of his monumental treatise, entitled "Gli Annali delle Epidemie in Italia dalle prime Memorie sino al 1850" (Annals of the Epidemics in Italy from the Earliest Records to 1850), a treatise which ran to five octavo volumes, and was succeeded by another of more exclusively modern interest, "La Chirurgia in Italia dagli Ultimi Anni del Secolo fino al Presente" (Surgery in Italy from the Closing Years of Last Century to the Present Time), Bologna, 1871. Similar historical works are his "L'Ostetricia in Italia dalla Metà del Secolo fino al Presente" (Obstetrics in Italy from the Middle of the Present Century till the Year now Passing), in three quarto volumes, Bologna, 1872; his edition, with preface and copious annotations, of the "Lettere del Lancisi al Morgagni e parecchie alltre ora per la prima volta pubblicate" (Letters from Lancisi to Morgagni and several others now for the first time published), Pavia, 1876; and his "Memorie per la Storia della Università di Pavia e degli Uomini più illustri che v' insegnarono" (Memoirs in Illustration of the History of the University of Pavia and of the most distinguished Men who taught there), Pavia, 1874–8, 3 vols., 4to. It will be remembered also that in 1888, on the solemn celebration of the eighth centenary of the "Mother of Universities," Bologna, Professor Corradi's pen was once more in requisition, when he delighted the *savants* assembled there from all parts of the world with his graphic sketch of the origin, the development and the future outlook of his *alma mater*. Other works of his it would be impossible to give in full detail; but mention may be made of his French paper contributed to the *Union Médicale* of Paris, 1865, "Sur l'Etiologie et l'Histoire de la Pellagre"; to his "Escursioni d'un Medico nel 'Decamerone'" (A Physician's Excursions into Boccaccio's "Decameron"), 1878; and to other lucubrations, only possible to a physician who was also a widely read man of letters, published in successive volumes of the "Atti dell' Istituto Lombardo." Professor Corradi's high qualities of head and heart were known and appreciated in every great medical school. In Germany and in Great Britain he was held in especial admiration and esteem, and his compatriots have noted with something like national pride the unique honours conferred on Italian medicine in the doctorates bestowed on him by the Universities of Cambridge and London.

LUIGI AMABILE.

"UNA vera perdita per la scienza" (a real loss to science) is the compendious note of our Italian contemporaries on the death of the Senator Luigi Amabile, Professor of Pathology in the University of Naples. A student and graduate in that school, he soon became connected with its teaching staff, first in the department of surgery and then in that of pathology. He was a bold and successful operator when laparotomy was yet in its infancy, while his treatise written in conjunction with Tommaso Virnicchi, and published at Naples in 1859, "Sulle Soluzioni di Continuo del Intestino e sul Loco Governo" (On Solutions of Continuity in the Intestines and in their Prevalent Seat), did much to promote sound and effective abdominal surgery. Besides his professorial duties, discharged with much energy and acceptance, he was an unwearied author and critic of papers read and discussed before the various medico-chirurgical societies of Naples and its provinces. His published memoirs and pamphlets on subjects of scientific and professional interest are very numerous, and several of these procured him the honorary fellowship of learned bodies, not only in Italy, but beyond the Alps. He represented more than once in the Italian Chamber the constituency of Avellino in the Liberal interest and was, in consideration of his statesmanlike intervention in hygienic and educational legislation, promoted to a seat in the Senate. To the last he retained his connexion with his *alma mater*, in which he held the post of Professore Ordinario e Direttore di Materia Patologica with equal usefulness and credit. Over and above his strictly professional work he distinguished himself in historical research, and, apart from his writings in medicine and surgery, established for himself an honourable reputation for his treatises on the philosopher and humanist Tommaso Campanella and on the "Inquisizione di Napoli." He died on the 24th ult.

THOMAS WATTS, M.R.C.S., L.S.A.

MR. THOMAS WATTS, who died on Nov. 29th, was for many years in practice in the country around Frampton-on-Severn, where he lived until he was compelled to retire on account of heart disease. Born in 1822, he received his preliminary education from Dr. Hales of Bath, entering King's College, London, in 1840. After leaving the College he worked with his father, on whose death in 1860 he succeeded to the practice.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary meeting of the Council of the College, held on Thursday, the 8th inst., Mr. Bryant, the President, in the chair, the minutes of the ordinary Council meeting of Nov. 10th were read and confirmed.

The Council confirmed their resolution of the 10th ult.,

and removed a Member from the privileges &c. of Membership, and the Secretary is to request him to return his diploma.

On the recommendation of the Nomination Committee, Mr. Clement Lucas was appointed an Examiner in Anatomy for the second examination for the Membership. Mr. F. Treves was appointed a member of the Court of Examiners in Surgery.

It was also agreed that, as recommended by the Nomination Committee, in pursuance of a unanimous resolution of the Board of Examiners in Anatomy and Physiology for the Fellowship, the papers on anatomy and physiology be in future given on separate days instead of on the morning and afternoon of the same day as at present arranged.

Sir W. MacCormac was elected a member of the Court of Examiners in Dental Surgery in succession to Mr. Heath.

The best thanks of the Council were given to Mr. Heath for the delivery of the Bradshaw Lecture on "Diseases of the Nose."

The President stated that he had accepted, on behalf of the Council, a silver box which had once belonged to Edward Jenner, presented to the College by Mr. A. M. Sydney Turner, J.P., M.R.C.S., of Gloucester, and the best thanks of the Council were given to Mr. Turner for his present.

Mr. Heath was appointed a member of the Committee of Management, in the place of Mr. Hutchinson.

A letter was read from the President reporting the proceedings of the General Medical Council at their late session, and the best thanks of the Council were given to him for his services as the representative of the College.

It was agreed that the lectures during the coming year (1893) should be delivered at 5 P.M. instead of 4 P.M. as hitherto.

Medical News.

ACCIDENT TO A SURGEON AT LEEDS.—Mr. Corrie of Nippet Cottage, Burmantofts, on Tuesday last, was conveyed to the Leeds Infirmary with a simple fracture of one of his legs consequent on a fall upon some ice-covered steps.

THE annual meeting of the Manchester Hospital Sunday and Saturday Fund was held on Monday. There had been received for the former £4305 17*s.* 6*d*, against £4852 0*s.* 11*d.* in 1891, showing a decrease of £544 3*s.* 5*d.* The amount contributed to the Hospital Saturday Fund was £3924 5*s.* 8*d*, against £3960 2*s.* 11*d.* last year, or a decrease of £35 19*s.* 3*d.*

RUGBY SCHOOL RUNS.—We understand that new regulations have been made respecting these runs, which it is stated are for exercise and not for competition. There will be two sets of "runs," one for big and another for small boys, any boy being able to obtain a medical certificate releasing him from these exercises if physically unfit. A responsible person will be in charge of the runs, and all those taking part in them will keep together until within two miles of the house.

SCARBOROUGH FEVER HOSPITAL.—At the instigation of the urban sanitary authority of Scarborough the erection of a temporary fever hospital has been commenced within a third of a mile from the Royal Artillery Barracks. The rural sanitary authority have protested against the erection of this building, their medical officer having stated that infection could make itself felt for over 1000 yards. At a meeting of the rural authority on Dec. 1st it was unanimously decided to intimate to the urban authority that it was desirable to stop the building of the hospital.

INSTITUTE OF CERTIFICATED SANITARY INSPECTORS.—The first annual meeting of the members of this Association was held on the 3rd inst. at the Sanitary Institute, and Mr. Wynter Blyth delivered the presidential address. The institute has for its objects the raising of the status of sanitary inspectors and the advancement of that branch of science which is concerned with the healthy internal arrangements and surroundings of households. Mr. Blyth said the new society was not established in a spirit of rivalry with any other association. It was unwise to trust to local authorities. The assistance of Dr. Newsholme would be of the highest value. They would have to obtain a charter of incorporation. Sir Thomas Crawford, Sir Douglas Galton and others addressed the meeting.

PADDINGTON-GREEN CHILDREN'S HOSPITAL.—In aid of the funds of this useful institution, which is greatly in need of help, a sale of fancy work was recently held at Lord Brassey's house in Park-lane. Owing to the large number of out-patients attending the hospital it has been found necessary to build a new wing. The interest of the occasion was enhanced by the opportunity afforded to visitors of inspecting his lordship's Indian museum.

ROYAL BRITISH NURSES' ASSOCIATION.—The fifth annual conversazione of this institution was held at Princes' Hall, Piccadilly, on Wednesday evening last, when Princess Christian pinned on the breasts of the new members the Association's bronze cross. The guests were received by Sir J. Crichton Browne, Mr. Pick, Miss Stuart of St. Bartholomew's Hospital and Miss Hogg of the Naval Nursing Hospital. Most of the metropolitan hospitals and many of those in the provinces were represented, the nurses being in uniform. Amusement was provided by Mr. Corney Grain and the performance of the "Bijou" Orchestra under Mr. J. Plougher.

WESTERN INFIRMARY, GLASGOW.—During the past year there have been treated in this infirmary 12,442 out-door patients and 3897 in-door. The average period of residence of the in-door patients was 34·37 days; the deaths numbered 312, or 8·03 per cent., but deducting 61, those who died within forty-eight hours after admission, the death-rate becomes 7·2 per cent. The total income (ordinary and extraordinary) for the year amounted to £26,157 6*s.* 10*d.*; after meeting all claims, both ordinary and extraordinary, the sum of £1461 9*s.* was carried to stock account. Each fully occupied bed cost £61 4*s.* 9½*d.*; the average cost per patient was £5 15*s.* 5½*d.* The Lady Hozier Convalescent Home at Lanark, a gift to this infirmary, containing about fifty beds, is almost ready for occupation, and the directors make an appeal for the £1300 to £1500 needed for its annual maintenance.

AN INSANITARY BOARD SCHOOL.—At the Southwark Police-court this week the clerk to the Lambeth vestry appeared to support a summons taken out against the clerk of the London School Board for disregarding notices requiring him to execute certain repairs in order to place the Johanna Board School in a sanitary condition. It appears that at the school in question a rain-water pipe connected with the drain was found to be discharging sewer air four feet below the open windows of the building. Dr. Verdon, the medical officer of health, had visited the school in the early part of 1891 and found the closets to be foul and ill-constructed. Cases of scarlet fever and diphtheria had arisen amongst the scholars, and he was convinced that the infection was due to the want of sanitary arrangements. Asked if the school could not be closed in order to afford time for effecting the proper repairs, the vestry clerk said that in that case the Government grant would be stopped. The magistrate, however, decided that after the expiration of seven days the work necessary must be proceeded with.

VICTORIA INFIRMARY, GLASGOW.—From the annual report of this institution, just published, we learn that last year 1081 patients received in-door treatment. Their average period of residence was 25·9 days; the deaths numbered 76, or 7·4 per cent.; but of these 23 cases were of such a nature that death took place within twenty-four hours, and deducting these the death-rate is reduced to 5·1 per cent. The average cost of each fully occupied bed was £60 11*s.* 1*d.*, and the average cost per patient £4 9*s.* 3*d.* These sums would have been much smaller but for the large feu-duty which has to be paid for the site of the infirmary. The out-door patients numbered 9431. The new pavilion at present building will, it is expected, be ready for patients in a few months; this will raise the accommodation to 150 beds. The ordinary income during the year exceeded the ordinary expenditure by £20 7*s.* 1*d.*—"a somewhat unusual but most satisfactory experience." Over a fourth of the ordinary maintenance income was subscribed by working men. The interest of working men in this infirmary is kept up by the fact that they elect five of the board of governors from amongst their own number, and it is gratifying to find that the number of works and factories qualified (by the amount of their subscription) to take part in this election is yearly increasing. Taking into consideration all sources of income and all kinds of expenditure, this infirmary has paid its way and added £3416 to its capital account, which now amounts to nearly £16,000

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ANDERSON, F. T., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the No. 4 Sanitary District of the Alton Union, vice Lazenby, resigned.

ANDERSON, W. H., M.B., C.M. Glasg., has been appointed Medical Officer for the No. 3 Sanitary District, Birkenhead.

BAILEY, S. H., M.B., M.S. Aberd., has been appointed Medical Officer for the Fifth Sanitary District of the Nottingham Union, vice Buckoll, resigned.

BODY, H. M., M.R.C.S., has been reappointed Medical Officer of Health for the Cheriton Urban Sanitary District.

BURTON, DR., has been reappointed Medical Officer of Health for the Greenford Rural Sanitary District.

CALLAGHAN, THOS., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Cork Dispensary District, vice Townsend, resigned.

DERAVIN, E. A., M.B., B.Ch. Melb., has been appointed Assistant Medical Officer of the Bendigo Hospital, Victoria, Australia.

DERRY, B. G., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Bodmin Urban Sanitary District.

DOLAMORE, W. H., L.R.C.P., M.R.C.S., L.D.S., has been appointed Second Dental Surgeon to the Westminster Hospital.

EDEN, W. A., L.S.A., has been appointed Assistant Medical Officer of the Infirmary, St. George's Union, vice Tompsett, resigned.

EVANS, WILLIAM, L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Anglesey Rural Sanitary Districts.

ELLIOTT, HARRY SCOTT, M.R.C.S., L.R.C.P., L.S.A. Lond., has been appointed Assistant House Physician to St. George's Hospital.

EWING, S. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Resident Medical Officer of the Victorian Eye and Ear Hospital, Melbourne, vice Shuter, resigned.

FRASER, PETER, M.D., M.S., B.Sc. (Public Health) Edin., has been reappointed Medical Officer of Health for the Llangefni Urban Sanitary District

FUSSELL, E. F., M.B. Aberd., M.R.C.P. Lond., has been reappointed Medical Officer of Health for East Sussex.

GARDNER, W. T., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed Medical Officer of Health for Acton.

GAULT, DAVID, L.R.C.S., L.R.C.P. Edin., has been appointed an additional Public Vaccinator for the District of Pahiatua, New Zealand.

GILPIN, F., M.R.C.S., has been reappointed Medical Officer of Health to the Stratford-upon-Avon Town Council.

HEARD, C. DE WOLFE, M.B. Melb., L.R.C.P., L.R.C.S. Edin., has been appointed a Public Vaccinator for Macarthur, Victoria, Australia.

HOOPER, F. L., M.R.C.S., has been appointed a Public Vaccinator and Health Officer for Mornington Shire, Victoria, Australia.

HUMPHREYS, J., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Trawsfynydd Sanitary District of the Festiniog Union.

MALVIN, M., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Eastern Sanitary District of Scarborough.

MILLARD, R. J., M.B., Ch.M. Sydney, has been appointed Junior Resident Medical Officer of the Hospital for the Insane, Paramatta, New South Wales, vice Scott, resigned.

MIRBACH, RUDOLPH, M.D., Ch.D. Munich, has been appointed an additional Public Vaccinator for the District of Waipawa, New Zealand.

MITCHELL, H. ST. JOHN, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Swan Hill, Victoria, Australia.

MORSE, EDWARD, L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer of Health for Torrington.

MULLALY, W. T., M.D., M.Ch. Qu. Univ. Irel., L.M. K.Q.C.P. Irel., has been appointed Health Officer to the Council of the Shire of Ballarat, Victoria, Australia.

OLDMEADOW, L. J. H., M.B., C.M. Edin., has been appointed Assistant House Surgeon to the Northern Hospital, Liverpool.

PEEBLES, F. M., M.B. Melb., has been appointed Resident Medical Officer of the Bendigo Hospital, Victoria, Australia.

PULLIN, T. H. S., M.D. St. And., F.R.C.S. Edin., M.R.C.S., has been reappointed Medical Officer of Health to the Sidmouth Local Board.

RYAN, T. F., M.B. Melb., has been appointed Health Officer for Lawloit Shire, Victoria, Australia.

SHOWMAN, L. F., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Birchip, Victoria, Australia.

SHUTER, R. E., M.B., Ch.B. Melb., has been appointed Resident Medical Officer of the Melbourne Hospital, Victoria, Australia.

SMITHIES, J. J., L.F.P.S. Glasg., L.R.C.P. Edin., has been appointed Medical Officer for the Giaburn Sanitary District of the Clitheroe Union, vice Lazenby, resigned.

SOUTHEY, A. J., M.R.C.S., has been reappointed Medical Officer of Health to the Slough Local Board.

TENNANT, T. H., L.F.P.S. Glasg., has been appointed Government Medical Officer and Vaccinator for the District of Hillston, New South Wales.

URQUHART, C. T. D., M.B., C.M. Aberd., has been appointed Physician to the Hospital for Incurables District, Aberdeen.

WILLIAMS, G. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Henstead Union.

WALL, M. E., M.D. Munich, has been appointed a Public Vaccinator for Bannockburn, Victoria, Australia.

WILSON, J. F., M.D., M.Ch. Irel., has been appointed Medical Officer of Health for the Meriden, Rugby, Solihull, Southam and Warwick Unions, and the Kenilworth, Rugby and Warwick Urban Sanitary Districts.

WRIGHT, HENRY, L.R.C.P., L.M. Edin., has been reappointed Medical Officer of Health for the Gainsborough Rural Sanitary District.

Vacancies.

For further information regarding each vacancy references should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 79, Gloucester-street, S.W.—House Surgeon. Board, lodging, fuel and light found.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £30 per annum, with board and residence.

GENERAL HOSPITAL, Birmingham.—Assistant House Surgeon, for six months. Residence, board and washing provided.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon. Rooms, coals and lights provided.

LEEDS PUBLIC DISPENSARY, New Briggate.—Junior Resident Medical Officer. Salary £85 per annum.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon.

NEW HOSPITAL FOR WOMEN, 144, Euston-road.—Two Clinical Assistants for the Out-patient Department, for one year.

NEW HOSPITAL FOR WOMEN, 144, Euston-road.—Two qualified Medical Women as Assistant Physicians in the Out-patient Department, for two years.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Surgeon. £120 per annum, increasing by £10 a year at the discretion of the Committee, with furnished apartments, board and washing.

ROYAL ALBERT HOSPITAL, Devonport—Assistant House Surgeon, for six months. Board, lodging and washing provided, with prospect of an honorarium of £10 10s.

ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £150, with furnished apartments, fire, light and attendance.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C.—Senior House Surgeon. Salary, with board and residence, £75 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—Clinical Assistants for six months.

ROYAL UNIVERSITY OF IRELAND, Dublin.—Examiner in Ophthalmology and Otology.

SHEFFIELD PUBLIC HOSPITAL AND DISPENSARY.—Junior Assistant House Surgeon. Salary £57 per annum, with board, lodging and washing. (Applications to Dr. Crochley Clapham, Hon. Sec. Medical Staff, the Grange, near Rotherham.)

STOCKPORT INFIRMARY.—House Surgeon. Salary £100 per annum, with board and apartments.

UNIVERSITY OF EDINBURGH.—Five Examiners.

VICTORIA HOSPITAL, Folkestone.—House Surgeon, unmarried. Salary £80 the first year, with an increase of £10 yearly for the following two years, together with board and residence.

Births, Marriages and Deaths.

BIRTHS.

BIGGER.—On Dec. 4th, at Queen's-park-gardens, Streatham-common, the wife of Dr. W. Grimshaw Bigger, of a son.

BODILLY.—On Dec. 2nd, at Grove-road, South Woodford, Essex, the wife of Reginald Thomas Hacker Bodilly, L.R.C.P., M.R.C.S., of a son.

ROBERTS.—On Nov. 29th, at Melton-under-Wychwood, Oxon., the wife of Henry Roberts, M.R.C.S., of a daughter.

TAIT.—On Nov. 28th, at Highbury-park, the wife of Edward Sabine Tait, M.D., of a son.

MARRIAGES.

DOWNIE—OGILVIE.—On Dec. 6th, at Buckingham-terrace, Edinburgh, Kenneth Mackenzie Downie, M.D., Indian Medical Service (Bengal), to Margaret, youngest daughter of the late James Ogilvie, Esq.

GORDON—REED.—On Oct. 6th, at Clunes, Victoria, Australia, by the Rev. Elder Gray, B.A., Arthur H. Gordon, M.R.C.S. Eng., A.K.C. Lond., youngest son of the Rev. J. B. Gordon, formerly Prebendary of Doon, to Elizabeth Scott, widow of the late Arthur Reed, of Clunes.

LYNDON—CLEMENTS.—On Nov. 30th, at St. Peter's Church, Eaton-square, George Ernest Lyndon, M.R.C.P., L.R.C.S. Irel., of Pembridge-gardens, Bayswater, to Lady Selina Clements, fifth daughter of the late Hon. and Rev. Francis Clements and sister of the late Earl of Leitrim.

PEART-THOMAS—DAWSON.—On Nov. 30th, at St. Nicholas Church, Brighton, by the Rev. Canon Haddock, Vicar of Clapham, Bedfordshire, assisted by Rev. C. W. Bond, Vicar, W. Peart-Thomas, M.B., C.M., Heckmondwike, Yorks, to Alice Mary, daughter of the late Rev. J. F. Dawson, The Woodlands, Bedford, and 1, Vernon-terrace, Brighton.

SMART—CADDY.—On Nov. 29th, at St. Luke's Church, Kew-gardens, William Herbert Smart, M.D., of Polesworth, Warwickshire, to Florence, elder daughter of Dr. Caddy, D.I.G., Royal Navy, of the Charterhouse, Lion-gate-gardens, Richmond.

WEBB—GOADBY.—On Dec. 1st, at Christchurch, Sandown, Isle of Wight, Sidney Roberts Webb, M.D., second son of Conrade E. Webb, of Hampstead, to Agnes Phœbe, second daughter of Major S. H. Goadby, of Sandown.

WREFORD—GUERRIER.—On Dec. 7th, at the Parish Church of St. Peter, Woking, John Wreford, L.R.C.P., M.R.C.S., third son of the late Samuel Wreford, of Exeter, to Emma Mary Joynson Guerrier, younger daughter of H. J. Guerrier, Esq., of Colville, Woking.

DEATHS.

HADAWAY.—On Dec. 6th, at Garlinge, Westgate-on-Sea, Dr. James Hadaway, formerly of 47 B, Welbeck-street, Cavendish-square, aged 73.

ROWLANDS.—On Nov. 28th, at King-street, Carmarthen, James David Rowlands, M.R.C.S., eldest son of James Rowlands, F.R.C.S.

SHONE.—On Dec. 3rd, at East Sheen, S.W., of pneumonia, Richard Lewis Shone, Surgeon, aged 60 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages and Deaths.

BOOKS ETC. RECEIVED.

ACKERMANN & EYLLER, Chicago.
Consumption and Kochine (Tuberculinum Kochu), Vol. II August 1892. By Rudolf Seiffert. With Coloured Plates. pp. 118.

BAILLIÈRE, TINDALL & COX, King William-street, Strand, London, and at the *Australasian Medical Gazette* Office, Sydney.
The Australasian Medical Directory and Handbook. Edited by L. Bruck Third Edition; corrected up to 31st August, 1892 pp. 237.

DAVIS, F. A., Co., London and Philadelphia.
Diseases of the Lungs, Heart and Kidneys. By N. S. Davis, Jun., A.M., M.D. 1892. pp. 359.

KEGAN PAUL, TRENCH, TRÜBNER & CO., London.
Past and Future; being a Second Edition, with Addenda, of Saturn's Kingdom, or Fable and Fact. By C. M. Jessop, M.R.C.P. Lond. 1892. pp. 307. Price 5s.

LONGMANS, GREEN & CO., London
Civilisation and Progress. By J. B. Crozier. Third Edition. 1892. pp. 464. Price 14s.

MACMILLAN & CO., London.
The Chemical Basis of the Animal Body. An Appendix to Foster's Text-book of Physiology. Fifth Edition. By A. Sheridan Lea, M.A., D.Sc., F.R.S. 1892. pp. 200. Price 7s 6d.

MACDOUGALL, A., Glasgow.
Transactions of the Glasgow Pathological and Clinical Society. Vol. III. Sessions 1886–1891. Edited by A. E. Maylard, B.S., M.B. Lond., and J. H. Carslaw, M.B. 1892. pp. 303.

PRINTED FOR THE ASSOCIATION, Philadelphia.
Transactions of the Association of American Physicians. Seventh Session, May, 1892. Vol. VII pp. 355.

PENTLAND, YOUNG J., Edinburgh and London
Illustrations of the Nerve Tracts in the Mid and Hind Brain and the Cranial Nerves arising therefrom. By Alex. Bruce, M.A., M.D., F.R.C.P. Edin. With Plates. 1892.

SMITH, ELDER & CO., Waterloo-place, London
Transactions of the Pathological Society of London. Vol XLIII., for the Session 1891-92. pp. 357.

SPOTTISWOODE & CO., Gracechurch-street, London.
The Dentists' Register for 1892. pp. 240.

THE RECORD PRESS, Limited, 376 Strand London.
Tasty Tit-Bits and Dishes Dainty. By Lady Constance Howard. pp. 162. Price 1s. 6d.

UNWIN, T. F., Paternoster-square, London.
Real Cookery. By Grid. 1893. pp. 86.

WOOD, WM., & CO., New York.
Diseases of the Chest, Throat and Nasal Cavities. By E. F. Ingals, A.M., M.D. Second Edition. Illustrated. 1892. pp 675.
Text-book of Nervous Diseases. By Chas. L. Dana, A.M., M.D. Illustrated. 1892. pp. 524.

Royal Road to the B.P.; by Mr. F. Clayton (Harmer & Harley London, 1892); price 1s.—Helbing's Pharmacological Record, No. XI., November, 1892 (at 63, Queen Victoria-street, London)—An Operation for the Radical Cure of Stricture of the Lachrymal Duct, with Description of a Stricturotome; by C. H. Thomas, M.D. (reprint from the Ophthalmic Review, Vol XI., No. 131).—De la Cystocèle Inguinale rencontrée au Cours de la Kélotomie; par le Dr. Henri Bourbon (G. Steinheil, Paris, 1892).—Teacher and Student, an Address; by Wm. Osler, M.D., F.R.C.P Lond. (J. Murphy & Co., Baltimore, 1892).—The Veterinarian; December, 1892 (Longmans, Green & Co., London); price 1s. 6d.—Poems in Petroleum; by J. C. Grant (E. W. Allen, London, 1892); price 2s.—Chirurgische Mittheilungen über die Chronisch Rheumatischen Gelenkentzündungen; vonf Prof. Dr. Max Schüller (L. Schumacher, Berlin, 1892).—A Case of Myxœdema in a Male; by A. Davies, M.B; also a Case of Myxœdema in a Male successfully treated by Injections of Sheep's Thyroid Juice; by A. Davies (Adlard & Son, Bartholomew-close, London).—Les Salpingites; par M. le Dr. Landau (H Lamertin, Bruxelles, 1892)—Studien zur Physiologie und Pathologie des Blutes und der Lymphe; von Dr. M. Löwit (G. Fischer, Jena, 1892).—Congrès Français de Chirurgie, 6e. Session, Paris, 1892 (Félix Alcan, Paris).—Physiologie, Travaux du Laboratoire de M. Chas. Richet; tome premier, Système Nerveux, Chaleur Animale (Félix Alcan, Paris, 1892).—The Cry of the Children (an Essay in Tyranny and Ignorance); by a Free Lance (Williams & Norgate, London, 1892); price 2s. 6d. net.—La Comtesse de Chambrun ses Poésies (C. L.) (Calmann Levy, Paris, 1893).—Magazines for December: Sunday at Home, Leisure Hour, Boy's Own Paper, Boy's Out-door Games and Recreations, Girl's Own Paper, Girl's Own Out-door Book (Religious Tract Society).

Medical Diary for the ensuing Week.

Monday, December 12.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays, at the same hour.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; and on Tuesday, Wednesday, Friday, and Saturday at the same hour.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.; and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2 P.M.; Thursday, 2.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.; and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M. Thursday, 9 A.M. Eye Department, 2.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. A Ernest Sansom: The Irregular Heart—a Clinical Study

Tuesday, December 13

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Skin Department, 1.45; Saturday, 9.15.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—Dr. Arthur H N Lewers: On some points in the Supra-vaginal Amputation of the Cervix Uteri for Cancer, with special reference to the methods adopted in cases where for two years and upwards the disease has not recurred.—Dr A Haig: The Effects of the Iodides on Arterial tension and the Excretion of Urates.

Wednesday, December 14

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations Thursdays, 2 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday and Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M. Dental Department, 9.30. Eye Department, 2.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

HUNTERIAN SOCIETY (London Institution).—8.30 P.M. Pathological Evening. Dr. James Galloway: Protozoa as Causes of Disease (with Lantern Demonstration).—Dr. Arnold Chaplin: Specimens showing Induration of the Lungs.—Dr. Charlewood Turner, Mr. C. J. Symonds and Mr. J. Poland will also exhibit Specimens.

Thursday, December 15.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. Ear and Throat Department, 9 A.M. Eye Department, 2.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road).—5 P.M. Dr. Dundas Grant: Affections of the External Meatus.

HARVEIAN SOCIETY.—8.30 P.M. Mr. Field: The Pathology and Treatment of Suppurative Diseases of the Ear. (Third Harveian Lecture.)

NEUROLOGICAL SOCIETY OF LONDON (National Hospital for the Paralysed and Epileptic, Queen-sq.).—8.30 P.M. Dr. Batten (introduced by the President): Facial Hemiatrophy.—Dr. Buzzard: Case with Anomalous Nervous Symptoms.—Dr. Pitt: Muscular Atrophy, with Hypertrophy of Neck Muscles.—Dr. Ferrier: Syringomyelia. And other cases.

Friday, December 16.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Eye Department, 2.

LONDON SKIN HOSPITAL (40, Fitzroy-sq., W.)—8 P.M. Dr. E. J. Barry: Psoriasis and its Treatment.

Saturday, December 17.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 8th, 1892.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Dec.	2	30·14	N.E.	36	35	45	44	35	·36	Hazy
,,	3	29·69	S.E.	34	43	55	52	36	·11	Raining
,,	4	29·61	N.W.	36	34	61	40	35	·12	Cloudy
,,	5	29·73	N.W.	32	..	49	39	31	..	Cloudy
,,	6	29·83	S.W.	33	32	..	41	31	..	Foggy
,,	7	29·97	N.E.	36	35	43	41	33	·11	Overcast
,,	8	30·23	N.	38	36	41	39	35	..	Cloudy

Notes, Short Comments & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

COMMUNICATIONS relating to the EDITORIAL business of THE LANCET must in every case be addressed *exclusively* "To the Editors," and not to them otherwise than in their official capacity.

RECURRENCE OF MEASLES.

Mr. Leonard S. Barnes, M.R.C.S., L.R.C.P. (Whitwell, Herts.), writes:—

"A severe epidemic of undoubted measles broke out in August and September last in this and neighbouring villages. All the schools were closed. This November the epidemic has returned, and with a few exceptions all the children have had it again, but more severely than in the last epidemic, several children dying of broncho-pneumonia. In this village out of 183 children 171 have had measles, nearly the same proportion as last August. Also in this last epidemic a great many adults who had had it in younger days caught the infection again. The first epidemic was typical of morbilli in every symptom and in the incubation and appearance of rash. I should like an explanation if anyone would forward me one."

*** Although from time to time undoubted instances of recurrence of true measles are met with, even at a short interval, yet we are unaware of any widespread recurrence similar to that observed by Mr. Barnes. Is it possible that the first and milder cases were cases of rötheln?—ED. L.

Mr. J. P. Long.—A list of the most recent literature on the subjects of pharmacology and therapeutics is given in our Students' Number, Sept. 3rd, 1892.

HÆMORRHAGE AFTER TOOTH EXTRACTION—ITS ARREST.

To the Editors of THE LANCET.

SIRS,—I have seen but two cases of serious hæmorrhage after tooth extraction. In both of these cases the plugging of the cavity with a piece of wool soaked in turpentine was at once rapid and effectual; and I think this treatment, which I owe to my teachers, is worthy of being more widely known. I am, Sirs, yours faithfully,

Aldersgate-street, E.C., December, 1892. R. MCINTOSH, M.B.

USE OF TITLES.

R. J. W.—The title mentioned—M.B.—implies the possession of a University degree in medicine, and many of our correspondent's friends will give him, in courtesy, the title of doctor; but he will do well not to assume it as a right. His titles appended to his name are its best ornament. The title of "Doctor" appertains to various faculties.

THE VIENNA MEDICAL SCHOOL.

WE have been favoured by an occasional correspondent with a sketch or *résumé* of the advantages which may be derived by a newly qualified practitioner from a sojourn of a few months in either Berlin or Vienna, preferably the latter. A short abstract of the communication can only be given here. *In limine*, a knowledge of the German tongue, or at least a working acquaintance with it, is almost indispensable to one who is desirous of pursuing the study of one or other of the ancillary branches of medicine and surgery. In Vienna every subject is taught in classes. Before the student can attend any course he has to matriculate in the university, which means simply sending in a paper with various items of information in it concerning birthplace, religion &c. Then, having decided what courses he proposes to attend, he fills in more papers and, as a rule, prepays the fees for them at the university. A difference is usually made between qualified and unqualified men, the former being generally charged a higher fee for a course than the latter. An advantage may be obtained in Vienna, as compared with London, in that a student can attend private classes limited to four or five men, whom a *privat docent* will teach and to whom he will show cases (spoken of as "material"). These patients are paid so much per hour for submitting to examination. By means of this system a large number of cases may be seen in a short time. The subjects which can with most advantage be studied are diseases of the throat, of the ear and of the skin. Gynæcology can also be fairly well studied in the Austrian capital. Bacteriology, however, is better learnt in Berlin than in Vienna. In some of the clinics, moreover, especially the smaller ones, exceptionally interesting cases are retained and come up periodically for examination by the students. Living in Vienna is not expensive; comfortable board and lodging may be had there at a cost of £2 2*s.* per week. In conclusion, it may be stated that if a student has only a short time at his disposal and wishes to get some experience in diagnosis in three or four special diseases, he will do well to spend that time in Vienna, and if on his arrival there he applies to the Secretary of the Anglo-American Medical Association, he will at once be supplied with, or put in the way of obtaining for himself, all the information he requires for his purpose.

Mr. J. G. Williamson, M.B.—Their name is legion. Among the leading ones are: *New York Medical Record, New York Medical Journal, Boston Medical and Surgical Journal, Medical News* (Philadelphia).

ENGLISH PRACTITIONERS ABROAD.

To the Editors of THE LANCET.

SIRS,—Sir Richard Quain, in his address at the General Medical Council, draws attention to the illiberal legislation respecting the practice of medicine by English medical men in France and Switzerland. As one who has run the gauntlet of heavy fines, permission to practise, retraction of permit, and, finally, the expense and loss of time in passing the Swiss examinations, I should like to point out yet another obstacle in the way of practice abroad, besides the examinations to be undergone. I refer to the taxation imposed on income. What the French scale is I am unable to say; but here, in Davos, the taxes on an income of 12,000 francs amount to 13·75 per cent. cantonal tax and about the same for local taxation. Roughly, that means paying six shillings out of every guinea. All incomes are treated alike, native and foreign. The scale begins at 1 or 2 per cent. on small incomes, but when 12,000 francs (about £477) are reached the taxation amounts to the sum I have stated. I am, Sirs, your obedient servant,

A. TUCKER WISE, M.D.
(Diplôme Suisse Fédéral).

Davos Platz, Switzerland.

"INVESTIGATIONS INTO THE ETIOLOGY OF MEDITERRANEAN FEVER."

Surgeon-Captain M. Louis Hughes (Malta) adds the following note to the paper on this subject which appeared in our last issue:—"Since forwarding this paper three more fatal cases of this fever have come under my notice, in all of which I have been able to demonstrate the presence of this micro-organism, both by cultivations and in cover-glass preparations of fresh splenic substance."

PHOTOGRAPHS AND TESTIMONIALS.

To the Editors of THE LANCET.

SIRS,—Will you call attention through your columns to a decided grievance of qualified assistants who reply to advertisements? Some time ago I replied to one. With my reply I forwarded a copy of testimonials and enclosed a stamped and addressed envelope for their return. From that day to this I have not seen either my testimonials, envelope or stamps. Surely, in the name of honesty, when a stamped addressed envelope is enclosed it is only just to return testimonials. The same applies to photographs, which are frequently advertised for but, as far as my experience goes, never returned.

I am, Sirs, yours faithfully,

Dec. 7th, 1892. AGGRAVATED (M.B.

METHOD OF MOUNTING SPUTUM.

MR. W. R. LAKE, F.R.C.S., submits to us a description of a method he has employed for preserving sputum containing tubercle bacilli, though, as he states, the method may have been already adopted with respect to other tissues. The following is the description of the process:—"The sputum to be preserved is put into a 5 per cent solution of corrosive sublimate, in which it can be kept for three weeks or more; but before using a specimen it should be transferred for some hours to normal saline solution, or the whole may be kept in a weak solution of corrosive sublimate in the normal saline solution. The next step consists in placing a small piece of the coagulated mucus on a cover glass after drying with filter paper and adding a few drops of a 1 in 2 solution of iodide of potassium, coloured slightly with iodine. As the secretion becomes coloured it softens; the excess of fluid is removed by filter paper and the sputum squeezed between two cover glasses in the usual way, dried and stained with Gabbet's stain. This method also enables one to keep a specimen to prove the efficacy of doubtful staining fluid."

Mr. G. S. Smith, B.Sc.Lond.—Our correspondent must be aware that there are many possible explanations for the discordant results, in view of the varying conditions of time and place as well as the differences in individual modes of thought and appreciation.

NEW SOURCE OF LEAD POISONING.

To the Editors of THE LANCET.

SIRS,—I have lately had my attention drawn to a new source of lead poisoning. A considerable number of men are now employed by the manufacturers of storage or secondary cells (used for electric lighting and other purposes) in making, cleaning and recoating the plates. The usual form of plate is a lead plate coated with red lead, but latterly cells have been introduced for the purpose of driving and lighting vehicles of various kinds, where lightness is an object, to meet which requirement the plates are made by compressing in a mould a mixture of sulphuric acid and red lead. The superfluous material which escapes from the mould is wiped off by hand apparently in many cases. This could be easily avoided, but it seems difficult for the men to escape getting the material on their hands during some part of the process, and I am told that during the mixing of the red lead and sulphuric acid a great deal of finely powdered red lead flies about and is inhaled. Most if not all the men seem to do their work with their hands unprotected, and one man came to me with his hands still showing traces of the red lead which he had been using.

The precautions which suggest themselves are extremely simple: the wearing of a thick leather or indiarubber glove in coating and making the plates and a respirator during the mixing process, as well as the enforcement of the usual rules as to cleanliness in eating and the use of sulphuric acid drinks, if the poisoning take place in that way and not by absorption through the skin. I believe many observers do not consider the latter method of introduction a likely one. As the manufacture of such batteries is of recent origin it is extremely likely that the employers do not think of the risk they are putting the men to, and the men being poorly educated (as the work is quite simple) and not following a trade with traditions, as in the case of painters and plumbers, may not have even heard of lead poisoning. I have seen three such cases during the last few weeks at the Westminster Hospital, all coming from the same employers; and I understand from one of them that out of thirteen men employed by his firm in making plates, four of them have suffered from lead poisoning in six months. During the last eighteen months I have seen two or three others from various works, so the carelessness is not peculiar to one firm.

I think that the matter is sufficiently serious to have attention called to it, seeing that plumbism is such a very unpleasant affection in its immediate consequences as well as serious in its remoter results, and at the same time easily avoided, if only those who are chiefly concerned will take the trouble to enforce precautions which are so simple in themselves.

I am, Sirs, yours truly,

Lower Seymour-street, W., Nov. 28th, 1892. W. A. WILLS, M.D.

MEDICAL ADVERTISING IN BANGALORE.

WE insert with much regret an advertisement in an Indian newspaper, the *Bangalore Spectator*, by a medical man, whose prizes might have been expected to raise him above either the disposition or the need to resort to such unprofessional methods of making his merits known:

> "C. G. R. Naylor, M.R.C.S. Eng., L.R.C.S. and P. Edin., late resident surgeon, Royal Maternity Hospital, Edinburgh; twice prizeman in midwifery and diseases of women and children; general medical practitioner and accoucheur. Open to engagement or consultation. Address, 'Charlton Hall,' No. 1, Magrath-road, near *Daily Post* Press."

M.R.C.S. Eng.—Our correspondent will find both subjects fully treated in Ziemssen's System of Therapeutics, of which an English translation was published a few years ago (Smith, Elder and Co.). The most recent manual on Medical Electricity is that by Steavenson and Jones (H. K. Lewis).

THE "TELEPHONE EAR."

WE hardly needed Mr. Rudyard Kipling's vivid sketch of the life passed at the end of a telephone by the American millionaire in summer quarters to bring before us that latest outcome of a too keenly competitive civilisation, the "telephone ear." That particular neurosis, which seems, in the New World at least, to be earning a place in classification with the "lawn tennis leg," had already been foreseen and described by Professor Lannois of the Lyons Medica. School. For ears which are not especially sound he considers the telephone to be quite contraindicated, as even in a comparatively robust organ its continuous use is followed by symptoms more or less grave—cephalalgia, vertigo, hyperæsthesia, insomnia and sometimes psychical disturbances of a character which might become chronic. He counsels a sparing use of the instrument in the case of those whose ears are sound and an absolute abstention from it in those whose organs are already impaired from causes hereditary or induced. His memoir, which was read and discussed in a confirmatory sense at the Congress of Aural Surgeons held in Paris in 1889, will be found in the "Comptes Rendus et Mémoirés," p. 265, for the same year.

W. E.—We believe our correspondent could not do better than consult Dr. Thresh of Chelmsford, the county health officer.

A FINGER GUARD.

To the Editors of THE LANCET.

SIRS,—May I draw attention, through the medium of your columns, to a new form of finger guard which has been made for me by Messrs. Maw, Son and Thompson? It is made of the thinnest possible rubber and rolled up, so that it can be applied to the finger in a moment. I have used these guards for the last six months in my out-patient clinic at the Lock Hospital with great comfort. The rubber is so thin that the slightest induration can be appreciated, and I need hardly insist on the importance of diagnosing an infecting sore at the earliest possible moment. The fingers are most easily cleansed and sterilised after each examination without corroding the surgeon's skin or risking the infection of the next patient. To those surgeons who have to examine a number of cases in a limited time, the old-fashioned precautions—bits of lint &c.—are impossible, and if no precautions be taken infection is merely a matter of time. I can strongly recommend these guards to all surgeons and gynæcologists.

I am, Sirs, yours faithfully,

Hertford-street, W., Nov. 1892. ARTHUR H. WARD.

HISTOLOGICAL RESPIRATION TEST.

IN an article in the *Boletin Médico de Puebla* on a new method for determining whether a child has breathed, Dr. Moreno points out that the epithelium of the alveoli of the lungs before birth is of a cubical character, but that after respiration has taken place it is flattened out into the ordinary tesselated variety. In order to determine whether this change has or has not occurred he injects a solution of nitrate of silver of the strength of 1 in 300 into the bronchus, which is then tied, and the whole lung suspended in the same silver solution for some hours. It is then dried, washed with distilled water and hardened in spirit, during which, being exposed to the action of light, the inter-epithelial cement reduces the silver salt and becomes blackened, so that the outline of the cells can be made out. Sections are then made and a solution of chloride of sodium employed to wash away any excess of silver. The sections are mounted in glycerine and examined.

Dr. R. McLeod (Upper Norwood).—The paper was duly received and is marked for publication.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*The Morning, Natal Witness, Cork Examiner, Leith Express, Dundee Advertiser, Coventry Herald, Medical Monthly, Times of India, Health, English Mechanic, Keighley News, Public Opinion, Flintshire Observer, Scientific American, Optician, Leeds Mercury, Scottish Leader, News of the World, Court Circular, Liverpool Daily Post, Sunday Times, Indian Engineering, Horncastle News, Irish Times, Blackburn Standard, Yarmouth Independent, Leicester Daily Post, Liverpool Mercury, Ipswich Journal, Western Morning News, Freeman's Journal, Trowbridge Chronicle, Medical Record (New York), Shield's Daily Gazette, Birmingham Daily Post, West Middlesex Standard, Surrey Advertiser, Hertfordshire Mercury, Mining Journal, Bristol Mercury, Insurance Record, Local Government Chronicle, City Press, Yorkshire Post, Reading Mercury, Weekly Free Press and Aberdeen Herald, Guy's Hospital Gazette, Local Government Journal, Builder, Architect.*

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